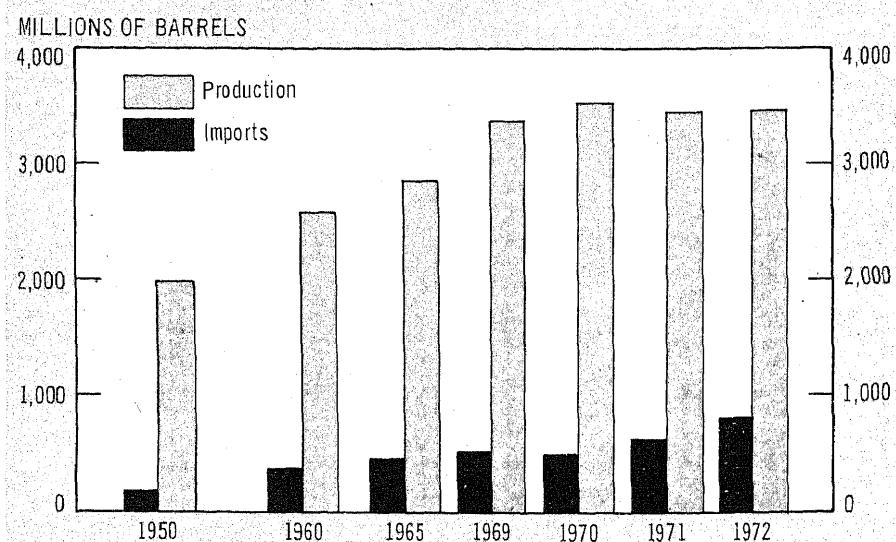


FIG. XXXIII. CRUDE PETROLEUM—PRODUCTION AND IMPORTS: 1950 TO 1972

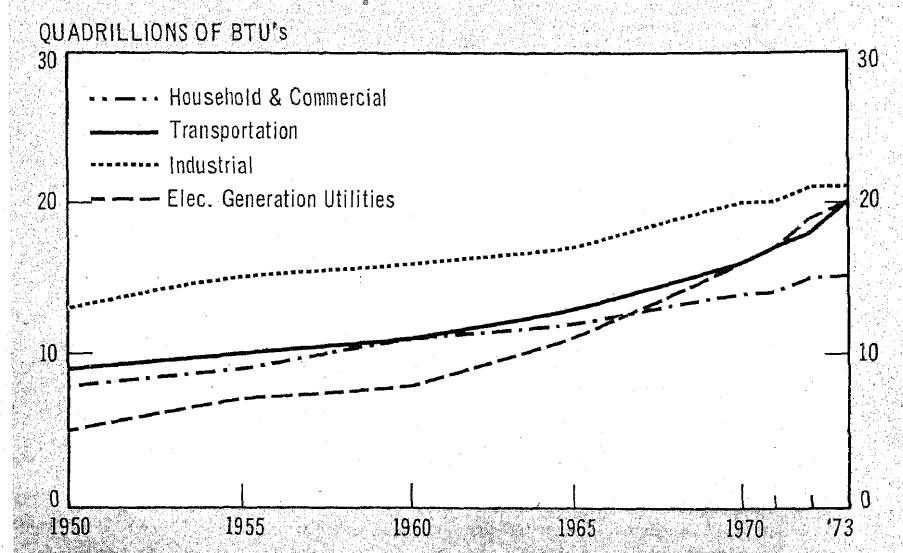
[See table 1138]



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Bureau of Mines.

FIG. XXXIV. FUEL RESOURCES—CONSUMPTION BY MAJOR CONSUMER GROUPS: 1950 TO 1973

[See table 858]



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Bureau of Mines.

Section 19

Energy

This section presents statistics on power and energy. The principal sources are the Federal Power Commission, the Department of the Interior, the Edison Electric Institute, New York and the American Gas Association, Arlington, Va.

The Federal Power Commission, in its *Annual Report* and in periodic publications and surveys, issues information on the electric power and natural gas industries, and on water power. Among annual reports are *Statistics of Privately Owned Electric Utilities in the United States*; *Statistics of Publicly Owned Electric Utilities in the United States*; *Sales of Firm Electric Power for Resale*; *Steam-Electric Plant Construction Cost and Annual Production Expenses*; *Hydroelectric Plant Construction Cost and Annual Production Expenses*; *Statistics for Interstate Natural Gas Pipeline Companies*; *Sales by Producers of Natural Gas to Natural Gas Pipeline Companies*; and *World Power Data*. Monthly reports include *Electric Power Statistics* and *Statistics of Major Interstate Natural Gas Pipeline Companies*. Principal surveys are the *National Power Survey, 1964*, and *1970*. These various publications contain national and State data on production of electricity, capacity of generating plants, fuels used in energy production, energy sales and consumption, hydroelectric power, construction costs and production expenses of power plants, and depreciation practices.

The Commission also issues data on electric utility charges in its annual *All-Electric Homes and Typical Electric Bills*; projections for the future in its periodic *Electric Power Requirements and Supply of the United States, by Regions, Present and Future*; and maps showing principal natural gas pipelines and electric facilities.

The *United States Energy Through the Year 2000* prepared by the Department of the Interior presents indicators of current and projected energy consumption; the Bureau of Mine's *Minerals Yearbook* contains data on coal, oil, and natural gas production and utilization.

The Edison Electric Institute's Monthly Bulletin and annual *Statistical Year Book of the Electric Utility Industry for the Year* contain data on the distribution of electric energy by public utilities; information on the electric power supply, expansion of electric generating facilities, and the manufacture of heavy electric power equipment in the annual *Year End Summary of the Electric Power Situation in the United States*.

Energy Facts, prepared for the Subcommittee on Energy of the House Committee on Science and Astronautics by the Library of Congress, has a comprehensive selection of U.S. and foreign energy statistics obtained from primary sources.

The *Annual Statistical Review* of the American Petroleum Institute contains statistics on supply and demand, production, imports, stocks, and sales of crude petroleum, petroleum products, and natural gas.

The American Gas Association, in its monthly and quarterly bulletins and its yearbook, *Gas Facts*, presents data on gas utilities, including sales, revenues, customers, prices, and other financial and operating statistics. Other sources include the Atomic Energy Commission's *Annual Report to Congress*, containing data on atomic energy, equipment, finances, and licenses, and the Rural Electrification Administration's *Annual Statistical Report—Rural Electric Borrowers*.

Historical statistics.—Tabular headnotes provide cross-references, where applicable, to *Historical Statistics of the United States, Colonial Times to 1957*. See preface.

No. 851. TOTAL HORSEPOWER OF ALL PRIME MOVERS: 1940 TO 1973

[In millions. As of January, except as noted. Prior to 1960, excludes Alaska and Hawaii, except as noted. Prime movers are mechanical engines and turbines, and work animals, which originally convert fuels or force (as wind or falling water) into work and power. Electric motors, which obtain their power from prime movers, are excluded to avoid duplication. See also *Historical Statistics, Colonial Times to 1957*, series S 1-14.]

ITEM	1940	1950	1955	1960	1965	1970	1971	1972	1973 (prel.)
Total horsepower	2,773	4,868	7,158	11,008	15,096	20,408	21,862	22,913	24,262
Automotive ¹	2,511	4,404	6,632	10,367	14,306	19,825	20,732	21,736	23,029
Nonautomotive	262	464	526	641	790	1,083	1,130	1,175	1,233
Factories ²	22	33	36	42	48	54	56	57	58
Mines	7	22	31	35	40	45	45	46	46
Railroads ³	92	111	60	47	44	54	56	57	57
Merchant ships and sailing vessels	59	523	524	24	24	22	21	21	20
Farms ⁴	70	165	212	240	272	290	300	305	308
Electric central stations ⁵	54	88	138	217	307	435	473	508	502
Aircraft ⁶	57	522	526	37	55	183	179	181	182

¹ Includes passenger cars, trucks, buses, and motorcycles. ² As of July 1. ³ Beginning 1965, data are projections. ⁴ Beginning 1965, not strictly comparable with earlier years. ⁵ Includes Alaska and Hawaii. ⁶ For 1973 includes estimates of about 1.4 million hp. in work animals and 15,000 in windmills. ⁷ Includes private planes and commercial airlines.

Source: The Twentieth Century Fund, J. F. Dewhurst and Associates, *America's Needs and Resources, A New Survey*; and John A. Waring, *Transactions of Canadian Sectional Meeting, World Power Conference, 1958*, and unpublished estimates.

No. 852. MINERAL FUEL RESOURCES AND ELECTRICITY—PRODUCTION AND CONSUMPTION: 1940 TO 1973

[In trillions of British thermal units, except percent. Prior to 1960, excludes Alaska and Hawaii, except data for bituminous coal include Alaska for all years. Unit heat values used are, B.t.u. per pound: Anthracite, 12,700; bituminous coal and lignite through 1954, 13,100; bituminous coal and lignite production: 1960, 12,830; 1965, 12,710; 1966, 12,650; 1967, 12,580; 1968, 12,530; 1969, 12,450; 1970, 12,290; 1971, 12,180; 1972 and 1973, 12,025; bituminous coal and lignite consumption: 1960, 12,740; 1965, 12,610; 1966, 12,550; 1967, 12,470; 1968, 130; 1969, 12,330; 1970, 12,110; 1971, 12,010; 1972 and 1973, 11,875. Crude petroleum, in B.t.u. per barrel: 5,800,000 through 1954; 1960, 5,695,000; 1965, 5,592,300; 1966, 5,257,440; 1967, 5,928,640; 1968, 5,585,010; 1969, 5,601,070; 1970, 5,620,900; 1971, 5,623,200; 1972, 5,598,000; 1973, 5,587,200. Natural gas: total production multiplied by 1,075 B.t.u. minus repressuring vent and waste gas multiplied by 1,035 through 1964; thereafter, dry natural gas production which excludes gas used for repressuring, vented, or flared multiplied by 1,032 B.t.u. per cubic foot for 1965 through 1968, and 1,031 in 1969-73, to which is added the computed energy equivalent of the heat value of natural gas liquids production for each year. For electricity series, hydropower and nuclear power converted to theoretical energy inputs calculated from national average heat rates for fossilfueled steam-electric plants using 10,760 B.t.u. per net kilowatt-hour in 1960; 10,433 in 1965; 10,415 in 1966; 10,432 in 1967; 10,398 in 1968; 10,447 in 1969; 10,404 in 1970. For 1971 to 1973, energy inputs for hydropower converted at an average heat rate of 10,379 B.t.u. per net kilowatt-hour generated; for nuclear power at an average heat rate of 10,660 B.t.u. per net kilowatt-hour based on information from the Atomic Energy Commission. See also *Historical Statistics, Colonial Times to 1957*, series M 71-87.]

YEAR	Total	PERCENT				YEAR	Total	PERCENT			
		Coal	Crude petroleum ¹	Natural gas ²	Electricity ³			Coal	Crude petroleum ¹	Natural gas ²	Electricity ³
Production:						Consumption:					
1940	25,088	53.3	31.3	11.9	(N/A)	1940	23,908	52.4	31.4	12.4	(N/A)
1950	34,510	42.4	33.2	19.8	(N/A)	1950	34,153	37.8	37.2	20.3	(N/A)
1960	41,552	26.8	35.3	34.0	3.9	1960	44,569	22.8	41.8	31.7	3.7
1965	40,074	27.3	32.4	36.0	4.3	1965	53,343	22.3	40.1	33.7	3.9
1966	51,831	26.7	32.7	36.6	4.0	1966	56,379	22.2	39.7	34.4	3.7
1967	54,829	26.0	33.0	36.6	4.4	1967	58,265	21.1	39.8	35.0	4.1
1968	56,575	24.7	32.9	38.1	4.4	1968	61,763	20.5	39.8	35.7	4.0
1969	58,741	24.2	32.2	38.9	4.8	1969	64,979	19.6	40.0	36.1	4.3
1970	61,852	24.4	32.0	39.0	4.6	1970	67,143	18.9	40.3	36.5	4.3
1971	61,029	22.4	31.7	40.6	5.3	1971	68,728	17.6	40.8	36.8	4.8
1972	62,164	23.3	31.1	40.0	5.6	1972	72,108	17.3	42.1	35.7	4.0
1973 (prel.)	62,041	23.2	30.2	40.6	6.0	1973 (prel.)	75,561	17.9	42.5	34.6	5.0

NA Not available. ¹ Includes commingled condensate. Beginning 1950, consumption includes petroleum products (net imports).

² Marketed production; represents natural gas, wet (unprocessed) and includes amount stored and lost in transmission. Consumption includes dry and liquid gas. Beginning 1965, on pressure base of 14.73 pounds per square inch absolute; formerly, on base of 14.65. ³ From hydropower and nuclear power.

Source: U.S. Bureau of Mines, *Minerals Yearbook*. Current data in *Mineral Industry Surveys*.

Energy Consumption

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No. 853. ENERGY INPUT TO THE U.S. ECONOMY, 1970 TO 1972, AND PROJECTIONS, 1975 TO 2000

[In quadrillions of B.t.u. except percent. For definition, see footnote, 3 table 874.]

ITEM	1970	1971	1972	PROJECTIONS			
				1975	1980	1985	2000
Total gross energy input.....	67.1	68.7	72.1	80.3	96.0	116.6	191.9
By consuming sector:							
Net energy consumption.....	56.2	57.0	59.5	65.1	76.1	89.7	140.1
Non-fuel uses ¹	3.9	3.9	4.2	4.7	5.4	6.4	10.7
Percent of total.....	6	6	6	6	6	5	6
Residential and commercial.....	17.0	17.4	18.2	20.2	23.9	27.7	39.6
Percent of total.....	25	25	25	25	25	24	21
Industrial.....	22.5	22.3	23.1	25.9	29.4	34.9	57.8
Percent of total.....	34	32	32	32	31	30	30
Transportation.....	16.5	17.1	18.1	19.1	22.9	27.1	42.7
Percent of total.....	25	25	25	24	24	23	22
Conversion losses ²	11.0	11.7	12.6	15.1	19.9	26.9	51.8
Percent of total.....	16	17	17	19	21	23	27
By energy source:							
Coal.....	12.7	12.0	12.5	13.8	16.1	21.5	31.4
Petroleum.....	29.5	30.6	33.0	35.1	42.2	50.7	71.4
Domestic supply.....	22.1	22.2	22.9	22.1	23.8	23.6	21.2
Supplemental supply.....	7.4	8.4	10.1	13.0	18.4	27.1	50.2
Percent of total.....	25	27	31	37	44	53	70
Natural gas.....	22.0	22.8	23.1	25.2	27.0	28.4	34.0
Domestic supply.....	21.2	21.8	22.0	22.6	23.0	22.5	22.9
Gas imports.....	.8	1.0	1.1	2.6	4.0	5.9	11.1
Percent of total gas.....	4	4	5	10	15	19	28
Nuclear power.....	.2	.4	.6	2.6	6.7	11.8	49.2
Hydropower.....	2.6	2.9	2.9	3.6	4.0	4.3	6.0

¹ Primarily asphalt and road oil in the residential and commercial sector, chemical feedstocks in the industrial sector, and lubes and greases in the transportation sector.

² Losses caused by converting a primary energy source to a secondary energy source.

Source: U.S. Dept. of the Interior, *United States Energy Through the Year 2000* and U.S. Bureau of Mines, *Minerals Yearbook*.

No. 854. ENERGY CONSUMPTION INDICATORS: 1947 TO 1972

(British thermal units were converted to coal equivalent at the Bureau of the Census on the basis of the 1972

average heat value of 24,050 thousand B.t.u. per ton. See headnote, table 853]

YEAR	Gross energy input		Net energy input						Conversion efficiency (percent) ²
			Total		Per capita		Per dollar of GNP ¹		
	Quadril- lion B.t.u.	Mil. tons of coal equivalent	Quadril- lion B.t.u.	Mil. tons of coal equivalent	Mil- lion B.t.u.	Tons of coal equivalent	1,000 B.t.u.	Pounds of coal equivalent	
1947.....	33.0	1,372	29.2	1,214	202.8	8.4	94.2	7.88	88.5
1950.....	34.0	1,414	29.7	1,235	194.8	8.1	83.6	6.95	87.3
1955.....	30.7	1,651	34.3	1,426	206.7	8.6	78.3	6.51	86.4
1960.....	44.6	1,855	38.2	1,588	211.5	8.8	78.3	6.51	85.7
1965.....	53.3	2,216	45.3	1,884	282.1	9.7	73.3	6.10	85.0
1966.....	56.4	2,345	47.6	1,979	242.2	10.1	72.3	6.01	83.8
1967.....	53.3	2,424	50.4	2,006	253.8	10.6	74.6	6.20	86.4
1968.....	61.7	2,566	51.7	2,150	257.7	10.7	73.2	6.09	83.7
1969.....	65.0	2,703	54.4	2,262	268.5	11.2	75.1	6.25	83.7
1970.....	67.1	2,790	56.2	2,337	274.3	11.4	77.8	6.47	83.8
1971.....	68.7	2,857	57.0	2,370	275.4	11.5	76.5	6.36	83.0
1972.....	72.1	2,998	59.5	2,474	285.0	11.9	75.2	6.25	82.5

¹ In constant 1958 dollars. ² Difference between total gross energy inputs and net energy inputs, representing losses from conversion of primary fuels to electrical energy.

Source: U.S. Dept. of the Interior, *United States Energy Through the Year 2000*.

No. 855. FOREIGN TRADE IN SELECTED MINERAL FUELS: 1950 TO 1973

YEAR	NATURAL GAS						CRUDE OIL					
	Imports		Exports		Net trade		Imports		Exports		Net trade	
	Mil. cu. ft.	Tril. B.t.u.	Mil. cu. ft.	Tril. B.t.u.	Mil. cu. ft.	Tril. B.t.u.	Mil. bbl.	Tril. B.t.u.	Mil. bbl.	Tril. B.t.u.	Mil. bbl.	Tril. B.t.u.
1950	-	-	25,727	27	25,727	27	178	1,029	35	201	143	828
1955	10,888	11	31,029	32	20,141	21	285	1,659	12	67	273	1,502
1960	155,646	161	11,332	12	144,314	149	372	2,116	3	18	369	2,098
1965	456,394	471	26,132	27	430,262	444	452	2,528	1	6	451	2,522
1966	479,780	495	24,639	25	455,141	470	447	2,499	2	8	445	2,401
1967	564,226	582	81,614	84	482,612	498	412	2,317	27	149	385	2,108
1968	651,885	673	93,745	97	558,140	576	472	2,638	2	10	470	2,628
1969	726,051	750	51,304	53	675,647	697	514	2,880	1	8	513	2,872
1970	820,780	846	69,813	72	750,967	774	483	2,716	5	28	478	2,688
1971	934,548	964	80,212	83	854,336	881	613	3,431	1	3	612	3,428
1972	1,019,496	1,051	78,013	80	941,483	971	811	4,541	(Z)	1	811	4,540
1973 (prel.)	1,030,000	1,062	80,000	83	950,000	979	1,178	6,584	1	3	1,177	6,581
COAL												
	PETROLEUM PRODUCTS						PETROLEUM PRODUCTS					
	Imports		Exports		Net trade		Imports		Exports		Net trade	
	1,000 sh. ton	Tril. B.t.u.	1,000 sh. tons	Tril. B.t.u.	1,000 sh. tons	Tril. B.t.u.	Mil. bbl.	Tril. B.t.u.	Mil. bbl.	Tril. B.t.u.	Mil. bbl.	Tril. B.t.u.
1950	365	10	29,360	766	28,995	756	133	833	77	438	56	395
1955	337	9	54,429	1,493	54,092	1,484	170	1,069	123	705	47	364
1960	262	7	37,981	1,044	37,719	1,037	203	1,839	71	393	222	1,446
1965	184	5	52,162	1,418	51,978	1,413	449	2,821	67	372	382	2,449
1966	178	5	50,833	1,381	50,655	1,376	492	3,093	71	392	421	2,701
1967	227	6	50,950	1,382	50,728	1,376	514	3,167	86	404	428	2,673
1968	224	6	51,938	1,407	51,714	1,401	567	3,468	83	473	484	2,905
1969	109	3	57,878	1,564	57,769	1,561	641	3,925	88	474	588	3,451
1970	36	1	72,411	1,991	72,375	1,990	765	4,672	90	519	675	4,153
1971	111	3	58,022	1,569	57,911	1,566	819	4,974	81	466	738	4,908
1972	47	1	57,151	1,546	57,104	1,545	924	5,571	81	463	843	5,108
1973 (prel.)	200	5	53,000	1,433	52,800	1,428	1,066	6,428	85	483	981	5,943

- Represents zero. Z Less than 500,000.

Source: Library of Congress, *Energy Facts*, November 1973, and U.S. Bureau of Mines, *Minerals Yearbook*.

No. 856. CRUDE OIL IMPORTS INTO THE U.S., BY COUNTRY OF ORIGIN: 1960 TO 1973

[In millions of 42-gallon barrels]

COUNTRY	1960	1965	1966	1967	1968	1969	1970	1971	1972	1973
Total, from all countries	372	452	447	412	1,472	1,514	1,483	1,613	1,811	1,184
Canada	41	108	127	150	1,160	1,203	1,245	1,263	1,312	365
Bolivia	-	-	1	7	7	6	1	1	2	1
Colombia	15	15	14	12	12	16	7	3	32	44
Venezuela	173	158	147	131	126	112	98	111	93	126
Algeria	(Z)	3	1	1	2	(Z)	2	5	32	44
Egypt	1	1	1	1	11	15	8	7	3	5
Libya	-	15	25	15	42	49	17	19	40	40
Nigeria	-	5	4	1	3	18	17	35	89	164
United Arab Emirates	-	5	5	2	6	5	23	29	27	26
Iran	13	29	31	24	21	15	12	39	50	79
Kuwait	48	20	10	7	16	13	12	11	13	15
Saudi Arabia	28	48	46	30	19	13	15	42	64	169
Indonesia	27	22	18	23	27	32	26	40	60	73
Abu Dhabi	-	5	5	2	6	5	23	29	27	26

- Represents zero. Z Less than 500,000. 1 Includes some Athabasca hydrocarbons.

Source: 1960-1972, American Petroleum Institute, *Annual Statistical Review*, U.S. Petroleum Industry Statistics; 1968-1972; 1973, U.S. Bureau of Mines, *Mineral Industry Survey*, Crude Petroleum, Petroleum Products, and Natural Gas Liquids, January 1974.

Energy Consumption and Requirements

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No. 857. ENERGY CONSUMPTION—TOTAL AND PER CAPITA: 1920 TO 1973

[Total in trillions, per capita in millions, of British thermal units. See headnote, table 852]

YEAR	ALL ENERGY		NATURAL GAS ¹		COAL ²		CRUDE PETROLEUM ³	
	Total	Per capita	Total	Per capita	Total	Per capita	Total	Per capita
1920.....	19,782	186	827	8	15,504	146	2,634	25
1925.....	20,809	180	1,212	10	14,706	127	4,166	36
1930.....	22,288	181	1,969	16	13,639	111	5,652	46
1935.....	19,107	150	1,974	16	10,634	84	5,499	43
1940.....	23,908	181	1,726	21	12,535	95	7,457	57
1945.....	31,541	238	3,973	30	15,972	121	9,619	73
1950.....	34,153	226	6,140	41	12,913	85	12,706	84
1955.....	39,956	243	9,232	56	11,703	71	16,328	99
1960.....	44,516	249	12,736	71	10,414	58	18,603	103
1965.....	53,999	278	16,097	83	12,358	64	21,566	111
1970.....	67,143	330	22,029	108	12,693	62	29,537	145
1971.....	68,698	338	22,819	111	12,043	58	30,570	148
1972.....	72,108	346	23,125	111	12,495	60	32,965	158
1973.....	75,561	360	23,558	112	13,520	64	34,689	165

¹ Dry gas only. Marketed production minus shrinkage caused by liquids extraction (3½ cubic feet per gallon produced). ² Includes bituminous coal and lignite and anthracite coal.

³ Includes petroleum products.

Source: The Library of Congress, *Energy Facts*, November, 1973.

No. 858. CONSUMPTION OF FUEL RESOURCES, BY MAJOR CONSUMER GROUP: 1965 TO 1973

[In trillions of British thermal units, except percent]

CONSUMER GROUP	FUEL INPUTS					PERCENT DISTRIBUTION				
	1965	1970	1971	1972	1973 (prel.)	1965	1970	1971	1972	1973 (prel.)
Total.....	53,343	67,143	68,698	72,108	75,561	100.0	100.0	100.0	100.0	100.0
Household and commercial.....	11,830	13,988	14,212	14,696	15,395	22.2	20.8	20.7	20.4	20.3
Industrial.....	17,209	20,268	20,001	20,561	21,387	32.3	30.2	29.1	28.5	28.4
Transportation ¹	12,714	16,473	17,058	18,088	18,746	23.8	24.5	24.8	25.1	24.8
Electrical generation utilities ²	11,042	16,208	17,222	18,560	19,803	20.7	24.2	25.1	25.7	26.2
Miscellaneous.....	548	216	205	233	260	1.0	0.3	0.3	0.3	0.3
Utility electricity purchased ³	3,600	5,226	5,519	5,988	6,416	(X)	(X)	(X)	(X)	(X)

X Not applicable. ¹ Includes bunkers and military transportation.

² Represents outputs of hydropower and nuclear power converted to theoretical energy inputs calculated from national average heat rates for fossil-fueled steam-electric plants provided by the Federal Power Commission.

³ Electricity generated and imported, converted at 3,412 B.t.u. per kilowatt-hour.

Source: U.S. Bureau of Mines, *Minerals Yearbook*. Current data in *Mineral Industry Surveys*.

No. 859. ANNUAL ENERGY REQUIREMENTS OF ELECTRIC HOUSEHOLD APPLIANCES

TYPE OF APPLIANCE	Aver- age wattage	Esti- mated kilo- watt-hours con- sumed	TYPE OF APPLIANCE	Aver- age wattage	Esti- mated kilo- watt-hours con- sumed	TYPE OF APPLIANCE	Aver- age wattage	Esti- mated kilo- watt-hours con- sumed
Food preparation:			Food Preparation:			Laundry—Con-		
Blender.....	386	15	—Con.			nonautomatic.	286	76
Broiler.....	1,436	100	Waffle iron.....	1,116	22	Water heater.....	2,475	4,219
Carving knife.....	92	8	Waste disposer.....	445	30	Quick- recovery.....	4,474	4,811
Coffee maker.....	894	106	Food preservation:					
Deep fryer.....	1,448	83	Freezer (15 cu. ft.).....	341	1,195	Comfort con- ditioning:		
Dishwasher.....	1,201	363	440	1,761	1,761	Air cleaner.....	50	216
Egg cooker.....	516	14	Frostless.....	241	728	Air-condi- tioner, room.....	1,566	1,389
Frying pan.....	1,196	186	Refrigerator (12 cu. ft.).....	321	1,217	Bed covering.....	177	147
Hot plate.....	1,257	90	Frostless.....	321	1,217	Dehumidifier.....	257	377
Mixer.....	127	13	Refrigerator/ freezer (14 cu. ft.).....	326	1,137	Fan:		
Oven, microwave Range:	1,450	190	326	1,829		Attic.....	370	291
With oven.....	12,200	1,175	615	1,829		Circulating.....	88	43
With self- cleaning oven.....	12,200	1,205	512	103		Rollaway.....	171	138
Roaster.....	1,333	205	Clothes dryer.....	4,856	993	Window.....	200	170
Sandwich grill.....	1,161	33	Iron (hand).....	1,008	144	Heater, port- able.....	1,322	176
Toaster.....	1,146	39	Washing ma- chine:			Heating pad.....	65	10
Trash compac- tactor.....	400	50	automatic.....	512	103	Humidifier.....	177	136

Source: The Library of Congress, *Energy Facts*, November, 1973.

No. 860. ELECTRIC ENERGY PRODUCTION AND INSTALLED GENERATING CAPACITY, BY CLASS OF OWNERSHIP AND TYPE OF PRIME MOVER: 1950 TO 1973

[Production for calendar years; other data as of December 31. Prior to 1965, excludes Alaska and Hawaii. See also *Historical Statistics, Colonial Times to 1957*, series S 15-35 and S 44-69]

ITEM	1950	1955	1960	1965	1969	1970	1971 (prel.)	1972 (prel.)	1973 (prel.)
Production (bil. k.w.-hr.)	389	629	842	1,158	1,553	1,640	1,718	1,853	1,948
Production per kw. of capacity (kw.-hr.)	4,776	4,779	4,484	4,469	4,602	4,490	4,393	4,373	4,255
Industrial plants ¹	60	82	88	102	111	108	104	106	99
Electric utilities (for public use)	329	547	753	1,055	1,442	1,532	1,614	1,747	1,849
Privately owned	267	421	579	809	1,102	1,183	1,250	1,357	1,445
Percent of utility production	81.1	76.9	76.8	76.7	76.4	77.3	77.5	77.6	78.1
Publicly owned	62	126	175	246	340	348	364	391	404
Municipal	15	26	37	50	70	71	73	79	79
Federal	40	89	112	145	183	186	194	207	211
Cooperatives and other ²	6	11	26	51	87	91	97	105	115
Source of energy (percent):									
Coal ³	47.1	55.1	53.6	54.5	{ 49.0	46.2	44.3	44.1	45.0
Nuclear					1.0	1.4	2.3	3.1	4.5
Oil	10.3	6.8	6.1	6.1	9.6	11.9	13.5	15.6	16.8
Gas	13.5	17.4	21.0	21.0	28.1	24.3	23.3	21.5	18.2
Hydro	29.2	20.7	19.3	18.4	17.3	16.2	16.5	15.6	14.7
Installed capacity (mil. k.w.)	83	131	186	255	333	360	387	418	457
Industrial plants ¹	14	16	18	18	19	19	19	19	19
Electric utilities (for public use)	69	114	168	236	313	341	367	400	438
Privately owned	55	87	128	178	240	263	287	315	345
Percent of utility capacity	80.1	75.9	76.5	75.2	76.6	77.0	78.1	78.8	78.8
Publicly owned	14	28	40	59	73	78	81	85	93
Municipal	5	8	11	15	20	21	22	23	25
Federal	7	17	22	32	36	39	40	41	44
Cooperatives and other ²	2	3	6	11	17	19	19	21	24
TYPE OF PRIME MOVER									
Electric utilities (for public use):									
Number of plants, total ⁴	3,867	3,587	3,435	3,200	3,472	3,519	3,558	3,603	3,622
Hydro	1,458	1,381	1,331	1,231	1,188	1,183	1,176	1,176	1,159
Steam	1,051	1,045	1,060	1,068	{ 1,003	1,009	1,017	1,017	1,017
Gas turbine					269	321	361	411	457
Internal combustion	1,358	1,161	1,044	991	1,012	1,006	1,004	999	989
Production (bil. kw.-hr.)	329	547	753	1,055	1,442	1,532	1,614	1,747	1,849
Hydro	96	113	140	194	250	247	266	273	271
Steam	230	430	603	856	{ 1,178	1,262	1,319	1,438	1,543
Gas turbine					8	16	22	29	29
Internal combustion	4	4	4	5	6	6	6	7	6
Installed capacity (mil. k.w.)	69	114	168	236	313	341	367	400	438
Hydro	18	25	32	44	53	55	56	57	61
Steam					10	15	22	28	33
Gas turbine	49	87	133	189	{ 246	266	285	310	330
Internal combustion	2	2	3	3	4	4	4	5	5

¹ Plants of 100 kilowatts and over, including stationary powerplants of railroads. ² Includes Power Districts and State Projects. ³ Includes small percentage from wood and waste and geothermal sources.

⁴ Each prime mover type in combination plants counted separately.

Source: U.S. Federal Power Commission, press releases.

No. 861. CONSUMPTION OF FUELS BY ELECTRIC UTILITIES: 1950 TO 1973

[Prior to 1965, excludes Alaska and Hawaii. Includes use of fuels for stand-by purposes. See also *Historical Statistics, Colonial Times to 1957*, series S 36-43]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973 (prel.)
Net generation by fuel ¹ bil. kw. hr.	233	434	607	881	1,284	1,348	1,475	1,578
Annual percent increase	² 10.4	² 13.3	² 6.9	² 7.2	8.3	5.0	9.4	7.0
Fuel consumed:								
Total coal equivalent	138	207	266	369	583	618	672	724
Coal, including lignite	92	144	177	245	321	328	351	388
Oil	75	75	85	115	336	306	494	557
Gas	629	1,153	1,724	2,321	3,932	3,993	3,979	3,605
Per kilowatt-hour:								
Coal	1.19	0.95	0.88	0.86	0.91	0.92	0.91	0.92
Oil	0.094	0.085	0.078	0.075	0.077	0.076	0.076	0.075
Gas	14.1	12.1	10.9	10.5	10.5	10.6	10.6	10.7

¹ Includes following kw.-hr., in billions: Nuclear power—4 in 1965, 22 in 1970, 38 in 1971, 54 in 1972, and 83 in 1973. ² 5-year average annual percent increase.

Source: U.S. Federal Power Commission, annual summaries and related monthly reports.

Electric Energy Production

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No. 862. ELECTRIC ENERGY—PRODUCTION, BY TYPE OF PRIME MOVER AND CLASS OF OWNERSHIP, STATES: 1960 TO 1972

[In millions of kilowatt-hours. Minus sign denotes decrease]

STATE	1960, total	1965, total	1970, total	1972 (prel.)				Annual percent change, 1965- 1972		
				Type of prime mover			Ownership of electric utilities			
				Total	Electric utilities	Indus- trial plants	Pri- vately owned			
				Fuel	Hydro					
U.S.	1,841,616	1,157,583	1,639,771	1,853,390	1,474,589	272,734	106,067	1,356,077	390,047	7.0
N.E.	32,670	44,078	65,574	72,659	62,999	5,087	4,573	67,072	1,013	7.4
Maine	4,696	5,854	7,273	7,557	3,039	1,769	2,750	4,777	30	3.7
N.H.	2,589	2,938	5,415	5,553	4,121	1,094	338	5,215	—	9.5
Vt.	918	821	989	1,293	332	873	86	1,063	152	6.7
Mass.	14,348	20,969	30,235	32,553	30,828	786	940	30,919	693	6.5
R.I.	1,816	1,390	1,624	1,322	1,284	6	33	1,245	45	-0.8
Conn.	8,303	12,102	20,037	24,381	23,395	559	427	28,862	92	10.5
M.A.	122,138	166,189	221,539	243,015	205,604	28,851	8,559	210,425	24,031	5.6
N.Y.	54,234	75,623	97,840	104,781	74,598	27,642	78,640	78,547	23,593	4.8
N.J.	19,078	28,405	38,306	35,409	34,088	-224	950	34,175	284	3.2
Pa.	48,826	62,161	85,393	102,824	96,323	1,533	4,980	97,702	154	7.5
E.N.C.	184,774	239,449	312,958	344,677	317,532	4,279	22,867	306,513	15,297	5.3
Ohio	55,785	64,186	85,768	98,301	92,553	9	5,740	90,591	1,971	6.3
Ind.	34,461	48,085	59,281	61,474	53,843	385	7,246	51,891	2,336	3.6
Ill.	45,023	58,983	76,697	85,620	83,282	133	2,205	80,908	2,507	5.5
Mich.	33,030	47,492	61,428	66,278	59,465	1,645	5,189	55,708	4,401	4.9
Wis.	15,576	20,703	29,784	33,004	28,390	2,107	2,507	26,416	4,082	6.9
W.N.C.	47,291	67,452	103,033	115,135	96,558	14,325	4,225	72,556	38,354	7.9
Minn.	11,495	15,653	20,486	23,031	19,310	359	2,361	18,640	1,529	5.7
Iowa	8,557	10,624	15,130	16,230	14,652	993	586	12,901	2,744	6.2
Mo.	11,089	16,773	20,411	33,461	32,404	612	444	26,944	7,072	10.4
N. Dak.	1,841	3,312	6,747	8,686	5,495	3,095	97	839	7,751	14.8
S. Dak.	1,721	4,373	7,341	8,137	705	7,390	42	708	7,388	9.3
Nebr.	4,365	5,415	7,988	8,452	7,066	1,372	15	—	8,438	6.6
Kans.	8,222	11,302	15,929	17,138	16,053	5	181	13,525	3,433	6.1
S.A.	120,433	172,880	263,493	314,935	281,161	17,480	16,295	278,959	19,681	8.9
Del.	2,437	3,435	5,808	5,506	5,400	—	196	5,236	164	7.2
Md.	10,668	18,698	24,917	28,733	25,068	2,282	1,443	27,267	83	6.4
D.C.	1,017	614	3,105	2,763	2,735	1	27	2,735	1	24.0
Va.	20,614	25,849	31,022	32,685	28,889	1,362	2,434	29,267	984	3.4
W. Va.	19,739	25,470	39,185	52,249	48,466	534	3,249	49,000	—	10.8
N.C.	21,374	32,574	53,174	59,056	51,162	6,428	1,475	56,185	1,406	8.9
S.C.	12,375	15,058	19,029	27,549	22,091	3,302	2,157	20,677	4,715	9.0
Ga.	12,479	18,777	29,446	36,492	30,204	3,332	2,957	32,047	1,489	10.0
Fla.	10,731	32,405	57,808	69,742	67,147	233	2,357	56,545	10,840	11.6
E.S.C.	93,261	116,801	151,672	172,445	142,273	25,160	5,013	58,655	108,777	5.7
Ky.	20,032	31,729	45,175	53,760	49,891	3,819	50	17,700	36,010	7.8
Tenn.	42,795	38,378	44,956	53,308	40,690	11,132	1,435	—	50,924	4.8
Ala.	26,635	40,740	49,908	52,375	39,550	10,208	2,617	29,099	20,659	3.7
Miss.	3,800	5,954	11,653	13,002	12,141	—	861	10,957	1,183	11.8
W.S.C.	87,683	131,245	211,347	243,847	204,370	3,921	35,557	182,736	25,554	9.3
Ark.	6,500	9,568	15,402	13,422	9,530	1,644	2,239	8,542	2,641	5.0
La.	19,284	26,945	46,406	51,787	39,348	—	12,440	37,200	2,148	9.8
Oklahoma	8,534	13,166	23,622	27,199	25,571	1,447	181	23,312	3,706	10.9
Tex.	53,364	81,609	125,916	151,438	120,912	830	20,697	113,682	17,080	9.2
Mt.	39,932	54,111	76,926	95,731	61,571	29,276	4,884	67,375	23,472	8.5
Mont.	6,040	8,897	10,045	10,703	1,246	9,444	14	6,810	3,871	2.7
Idaho	6,315	6,802	7,262	8,018	(2)	7,844	175	6,512	1,332	2.4
Wyo.	1,762	3,725	6,074	8,470	7,064	1,172	233	7,061	1,176	12.5
Colo.	5,935	8,193	12,292	13,022	12,204	1,242	475	9,460	3,987	7.9
N. Mex.	3,454	8,710	15,569	18,806	18,192	20	595	17,620	592	11.6
Ariz.	9,458	9,941	14,434	17,374	9,280	6,771	1,323	5,991	10,059	8.3
Utah	4,172	4,825	4,749	5,123	2,145	1,220	1,758	2,417	948	2.4
Nev.	2,796	3,519	5,911	13,316	11,441	1,563	312	11,497	1,507	21.0
Pac.	1,113,434	165,978	233,229	250,945	102,496	144,356	4,093	112,385	134,466	6.1
Wash.	35,417	50,200	73,036	79,626	2,043	75,716	967	4,927	73,732	6.8
Oreg.	13,118	17,058	30,473	37,079	55	36,469	555	9,122	27,402	11.7
Calif.	64,899	94,189	123,776	127,009	93,472	31,802	1,735	93,458	31,816	4.4
Alaska	(N.A.)	948	1,515	1,887	1,271	346	270	101	1,517	10.3
Hawaii	(N.A.)	2,924	4,428	5,344	4,766	22	567	4,778	—	9.0

- Represents zero. N.A. Not available. Z Less than 500,000 kw.-hr.

¹ Excludes Alaska and Hawaii.

Source: U.S. Federal Power Commission, annual summaries and related monthly reports.

No. 863. ELECTRIC ENERGY—INSTALLED GENERATING CAPACITY, BY TYPE OF PRIME MOVER AND CLASS OF OWNERSHIP, STATES: 1960 to 1972

[In thousands of kilowatts. As of Dec. 31. Covers utilities for public use and industrial plants]

STATE	1960, total	1965, total	1970, total	1972 (prel.)					Annual percent change 1965- 1972	
				Type of prime mover			Class of ownership of electric utilities			
				Total	Electric utilities	Indus- trial plants	Pri- vately owned	Pub- licly owned		
U.S.	1,185,815	254,519	360,327	418,457	343,040	56,566	18,851	314,859	84,748	7.4
N.E.	8,225	10,033	14,532	17,561	14,875	1,480	1,206	15,943	412	8.3
Maine	1,102	1,267	1,432	2,266	1,408	342	506	1,729	21	8.6
N.H.	850	844	1,241	1,240	785	381	74	1,163	3	5.6
Vt.	283	324	322	922	719	186	17	835	69	16.1
Mass.	3,459	4,608	6,560	7,806	6,926	435	446	7,126	234	7.8
R.I.	456	449	371	377	358	2	16	384	7	-2.5
Conn.	2,074	2,540	4,606	4,960	4,680	184	146	4,736	78	10.0
M.A.	27,847	36,126	52,318	59,942	52,073	5,967	1,903	54,588	3,451	7.5
N.Y.	12,360	17,463	22,674	24,927	20,415	3,974	538	21,109	3,281	5.2
N.J.	4,809	6,697	8,933	11,111	10,584	341	236	10,758	116	7.5
Pa.	10,578	11,965	20,711	23,903	21,124	1,651	1,128	22,721	54	10.4
E.N.C.	41,045	49,939	67,750	77,537	72,633	839	4,065	69,207	4,266	6.5
Ohio	11,841	13,279	18,200	21,436	20,453	2	981	19,636	819	7.1
Ind.	7,884	9,324	12,182	12,836	11,648	93	1,005	11,118	623	4.7
Ill.	10,084	13,110	18,287	21,743	21,199	32	512	20,498	732	7.5
Mich.	7,923	9,346	12,171	13,913	12,562	344	1,007	11,744	1,181	5.8
Wis.	3,863	4,880	6,911	7,608	6,772	368	469	6,211	929	6.5
W.N.C.	12,265	17,407	24,708	28,729	24,818	3,089	822	18,276	9,631	7.4
Minn.	2,809	3,542	4,527	5,484	4,829	136	519	4,202	763	6.4
Iowa	2,139	2,749	3,715	4,129	3,890	132	107	3,033	989	6.0
Mo.	2,813	4,291	7,707	9,738	8,329	801	108	7,461	2,189	12.4
N. Dak.	679	755	1,364	1,328	908	490	20	191	1,116	8.4
S. Dak.	557	1,482	1,717	1,719	1,384	9	300	1,411	2.1	
Nebr.	1,281	1,595	2,022	2,163	1,922	236	5	-	1,157	4.4
Kans.	2,036	2,996	3,657	4,168	4,113	2	54	3,089	1,025	4.8
S.A.	25,836	38,094	56,631	70,421	62,067	5,505	2,849	62,111	5,461	9.2
Del.	495	639	1,030	1,030	1,000	-	30	956	44	7.1
Md.	2,349	3,914	5,296	6,675	5,968	494	216	6,407	52	7.0
D.C.	555	549	1,127	1,322	1,306	3	13	1,306	3	13.4
Va.	4,103	5,578	6,849	7,883	6,557	842	484	7,115	284	5.1
W. Va.	4,222	4,610	7,185	10,371	9,675	101	596	9,776	-	12.3
N.C.	4,654	6,654	9,970	11,506	9,381	1,834	291	10,825	300	8.1
S.C.	2,697	3,170	4,558	6,195	4,624	1,145	426	4,664	1,105	10.0
Ga.	2,504	4,508	6,739	8,782	7,319	1,056	407	7,754	622	10.0
Fla.	4,287	8,472	13,868	16,666	16,239	30	387	13,307	2,063	10.1
E.S.C.	17,573	24,911	31,808	36,438	30,288	5,259	891	14,074	21,473	5.6
Ky.	3,398	6,127	9,359	10,370	9,662	688	22	4,320	6,028	7.8
Tenn.	7,074	8,601	9,763	10,428	8,066	2,065	298	172	9,958	2.6
Ale.	5,068	8,748	10,172	12,288	9,316	2,508	464	6,692	5,132	5.0
Miss.	1,133	1,345	2,524	3,853	3,245	-	103	2,890	355	13.9
W.S.C.	20,082	29,839	46,064	55,116	47,654	2,279	5,182	40,780	9,153	9.2
Ark.	1,437	2,321	3,630	3,864	2,549	997	308	2,236	1,310	7.5
La.	4,050	6,004	9,209	10,534	8,849	-	1,685	7,763	1,036	8.4
Okla.	2,274	3,145	4,846	5,612	4,812	765	35	4,341	1,236	8.6
Tex.	12,321	18,370	28,379	35,116	31,444	517	3,155	26,440	5,522	9.7
Mt.	9,489	13,747	17,733	20,861	13,369	6,601	891	14,057	5,913	6.1
Mont.	1,369	1,404	1,837	1,886	371	1,512	4	1,132	750	4.3
Idaho	1,294	1,295	1,300	1,304	10	1,255	39	1,039	226	0.1
Wyo.	433	893	1,174	1,854	1,583	222	50	1,573	227	11.0
Colo.	1,412	2,083	2,915	2,991	2,153	743	95	1,971	925	5.3
N. Mex.	879	1,885	3,569	3,719	3,571	24	124	3,378	217	10.2
Ariz.	2,482	3,811	4,300	4,732	2,510	1,960	262	1,764	2,706	3.1
Utah	853	1,042	1,038	1,038	585	202	246	602	186	-0.1
Nev.	768	1,334	1,604	3,340	2,588	682	70	2,594	677	14.0
Pac.	1,23,453	34,423	48,782	51,853	25,264	25,546	1,043	25,822	24,988	6.0
Wash.	7,534	9,646	12,981	13,213	1,043	11,842	329	1,055	11,829	4.6
Oreg.	2,798	3,363	5,699	5,967	169	5,638	160	1,585	4,222	8.6
Calif.	13,121	20,359	28,556	31,045	22,730	7,987	329	22,180	8,537	6.2
Alaska	(NA)	261	415	499	354	76	68	30	400	9.7
Hawaii	(NA)	803	1,101	1,129	968	3	157	972	-	5.0

- Represents zero. NA Not available. Z Less than 500 kw.

¹ Excludes Alaska and Hawaii.

Source: U.S. Federal Power Commission, annual summaries and related monthly reports.

No. 864. PRIVATELY-OWNED ELECTRIC UTILITY GENERATING PLANTS—NUMBER AND CAPACITY, BY TYPE AND SIZE OF PLANT: 1950 TO 1972

TYPE AND SIZE OF PLANT	1950	1955	1960	1965	1970	1971	1972
NUMBER							
Total	2,116	1,965	1,896	1,724	1,923	1,949	1,984
Steam plants	684	691	707	653	661	666	661
Under 100,000 kilowatts	543	461	362	256	219	206	203
100,001-500,000	141	224	298	309	237	287	273
500,001 and over	—	16	47	89	155	173	185
Nuclear plants	—	—	4	7	13	15	21
Hydraulic plants	990	924	866	754	702	702	695
Under 5,000 kilowatts	702	602	523	393	336	336	329
5,001-25,000	186	207	200	205	208	201	200
25,001 and over	102	115	134	156	163	165	166
Internal combustion ¹	442	350	319	310	547	566	607
Under 5,000 kilowatts	428	328	291	234	223	208	207
5,001 and over	14	22	28	36	89	92	105
CAPACITY (1,000 KILOWATTS)							
Total	54,833	87,009	133,839	177,478	259,662	288,205	312,067
Steam plants	44,633	75,301	119,820	159,141	220,586	242,077	256,097
Under 100,000 kilowatts	13,355	13,596	11,588	9,273	8,375	7,708	7,541
100,001-500,000	31,278	50,608	75,397	80,400	74,295	74,492	71,221
500,001 and over	—	11,097	32,835	69,459	137,866	150,877	177,335
Nuclear plants	—	—	—	321	856	5,622	7,770
Hydraulic plants	9,626	11,084	13,010	15,840	18,638	18,819	18,908
Under 5,000 kilowatts	950	877	812	701	654	663	650
5,001-25,000	2,202	2,459	2,498	2,418	2,415	2,346	2,336
25,001 and over	6,474	7,748	9,700	12,721	15,509	15,810	15,922
Internal combustion ¹	574	624	688	1,641	14,866	19,539	23,939
Under 5,000 kilowatts	489	446	447	424	437	417	420
5,000 and over	105	178	241	308	1,987	1,623	1,927

[—] Represents zero. ¹ Includes gas turbine plants, not shown separately.

Source: U.S. Federal Power Commission, *Statistics of Privately Owned Electric Utilities in the United States*, annual.

No. 865. RURAL ELECTRIFICATION ADMINISTRATION—ELECTRIC PROGRAM, SUMMARY OF OPERATIONS: 1950 TO 1973

[Includes data from Virgin Islands and Puerto Rico]

ITEM	1950	1955	1960	1965	1970	1971	1972 ¹	1973 ¹
Loans approved, cumulative, Dec. 31: ²								
Borrowers ³	1,076	1,077	1,087	1,103	1,096	1,094	1,092	1,091
REA amount ⁴ mil. dol.	2,312	3,125	4,256	5,793	7,496	7,835	8,356	8,945
Non-REA amount ⁴ mil. dol.	—	—	—	—	—	33	141	660
Systems in operation, Dec. 31: ⁴								
Systems ⁵	1,007	1,026	1,038	1,052	1,050	1,048	1,047	1,046
Miles energized ⁶	1,089	1,362	1,465	1,567	1,676	1,700	1,733	1,767
Consumers served	3,413	4,251	4,826	5,541	6,442	6,748	7,076	7,457
Borrowers' operations during year: ⁷								
Energy generated ⁷ mil. kw.-hr.	1,077	3,255	4,922	8,834	23,814	27,760	32,200	32,045
Energy purchased ⁷ mil. kw.-hr.	7,270	14,996	26,037	39,104	60,478	65,494	70,610	70,235
Energy sold ⁷ mil. kw.-hr.	6,884	15,739	27,269	42,668	76,009	84,283	92,584	100,688
Revenue ⁷ mil. dol.	229	420	615	847	1,309	1,482	1,681	1,913
Average monthly consumption per consumer, all consumers ⁸ kw.-hr.	180	306	466	654	948	998	1,063	1,120
Residential consumers ⁸ kw.-hr.	147	242	357	479	887	711	754	793
Total utility plant ⁹ mil. dol.	(NA)	2,706	3,697	4,979	7,175	7,708	8,313	9,043
Employees	(NA)	(NA)	(NA)	31,702	37,013	38,197	39,779	41,422

[—] Represents zero. NA. Not available. ¹ Preliminary, except loans approved. ² Net; i.e., excludes loans rescinded. ³ Organizations, mainly cooperatives, to which loans for extending central station electric service in rural areas are made. ⁴ Includes data at time of repayment of loan for borrowers whose loans have been repaid in full. As of Dec. 31, 1973, there were 66 such borrowers, with 25,498 miles energized and 144,266 consumers served. ⁵ Rural electric distribution, generation, and transmission systems operated by REA borrowers. ⁶ Pole miles of electric distribution and transmission line in service. ⁷ Excludes energy sales and revenues of power sold by one REA borrower to another. ⁸ Includes rural-nonfarm and farm consumers.

Source: U.S. Rural Electrification Administration, *Annual Statistical Report—Rural Electric Borrowers*.

No. 866. UTILITY ELECTRIC ENERGY USE, 1960 TO 1972, AND PROJECTED REQUIREMENTS, 1975 TO 1990

[Excludes generation by industrial facilities and railways having generating facilities of their own]

YEAR	ENERGY USE				PEAK LOAD		
	Billion kw.-hr.	Percent increase		Kw.-hrs. per capita ²	Million kw.	Percent increase	
		From 1960	For each interval ¹			From 1960	For each interval ¹
1960-----	764	(X)	(X)	4,229	138	(X)	(X)
1965-----	1,060	38.7	6.8	5,457	189	37.0	6.5
1970-----	1,534	100.8	7.7	7,487	276	100.0	7.9
1971 (proj.)-----	1,617	111.6	5.4	7,810	293	112.3	6.2
1972 (proj.)-----	1,755	129.7	8.5	8,403	320	130.9	9.2
1975-----	2,194	187.2	7.7	10,131	398	158.4	7.5
1980-----	3,086	303.9	7.1	13,366	556	302.9	6.9
1985-----	4,263	455.0	6.7	17,311	769	457.2	6.7
1990-----	5,852	666.0	6.5	22,442	1,056	665.2	6.5

X Not applicable. ¹ Represents annual growth rate. ² Based on U.S. Bureau of the Census population data including Armed Forces abroad for July 1, except 1970 and projections based on April 1, 1970 census count. Projection figures used are from series D (see table 3).

Source: U.S. Federal Power Commission, *National Power Survey*, 1970, and unpublished data.

No. 867. ELECTRIC UTILITY INDUSTRY—CAPABILITY, PEAK LOAD, AND GROSS MARGIN: 1967 TO 1973

[In millions of kilowatts, except percent. Excludes Alaska and Hawaii]

YEAR	CAPABILITY			PEAK LOAD		GROSS MARGIN	
	Total	Annual increase		Total	Annual percent change	Total	Percent of capability
		Total	Percent				
1967: Summer-----	258.0	17.3	7.2	213.5	5.0	44.5	17.2
December-----	267.8	20.1	8.1	206.9	6.3	61.9	23.1
1968: Summer-----	279.0	21.0	8.1	238.0	11.5	41.0	14.7
December-----	288.8	21.0	7.8	226.7	10.1	62.1	21.5
1969: Summer-----	300.3	21.4	7.7	257.7	8.3	42.7	14.2
December-----	311.5	22.7	7.9	236.6	4.4	74.9	24.0
1970: Summer-----	326.9	26.6	8.9	274.7	6.6	52.3	16.0
December-----	339.1	27.6	8.9	248.6	5.1	90.5	26.7
1971: Summer-----	353.3	26.4	8.1	292.1	6.4	61.2	17.3
December-----	366.7	27.7	8.2	261.7	5.3	105.1	25.7
1972: Summer-----	381.7	28.5	8.1	319.2	9.3	62.6	16.4
December-----	394.1	27.4	7.5	291.0	11.2	103.1	26.2
1973: Summer-----	415.9	34.2	9.0	343.9	7.8	72.0	17.3
December-----	429.8	35.7	9.1	284.5	-2.2	145.3	33.8

Source: Edison Electric Institute, New York, N.Y., 1968 and 1973 Year-End Summary of the Electric Power Situation in the United States.

No. 868. FEDERAL ELECTRIC UTILITY PROJECTS—INSTALLED CAPACITY AND INVESTMENT ALLOCATED TO ELECTRIC PLANT: 1960 TO 1972

[As of June 30. Comprises only electricity-generating plant of these projects; excludes projects not primarily manufacturing electricity (e.g., West Point, Annapolis). Investments represent allocation to power projects for capital equipment and improvements. Reserves for depreciation not deducted]

PROJECT GROUP OR SYSTEM	INSTALLED CAPACITY (1,000 kw.)				INVESTMENT ALLOCATED ¹ (mil. dol.)			
	1960	1965	1970	1972	1960	1965	1970	1972
	Total	Percent capacity of all electric utilities	1965	1970	1972	1960	1965	1970
Total-----	22,616	29,317	36,650	38,356	5,398	7,925	10,121	11,688
Percent capacity of all electric utilities-----	13.5	12.8	10.7	9.6	(X)	(X)	(X)	(X)
Central Valley: Bureau of Reclamation-----	630	1,014	1,322	1,322	138	294	213	226
Columbia Basin:								
Bonneville Power Admin. (transmission)-----	—	—	—	—	480	614	1,118	1,296
Bureau of Reclamation-----	2,282	2,282	2,464	2,554	277	676	369	464
Corps of Engineers-----	3,781	4,262	6,522	7,322	850	956	1,603	1,682
Hoover and Parker-Davis: Bu. of Reclamation-----	1,595	1,690	1,690	1,690	209	217	225	228
Missouri Basin: Bureau of Reclamation-----	397	678	693	693	304	520	508	527
Corps of Engineers-----	745	1,580	2,048	2,048	357	601	714	718
Southeastern Power Adm.: Corps of Engineers-----	1,271	1,677	1,910	1,910	410	547	644	644
Southwestern Power Administration:								
Southwestern Power Admin. (transmission)-----	—	—	—	—	27	37	56	59
Corps of Engineers-----	601	1,242	1,533	1,711	203	351	438	504
Tennessee Valley Authority-----	11,032	13,923	17,256	17,714	2,054	2,685	3,703	4,756
Other projects-----	289	969	1,212	1,382	88	427	540	555
Bureau of Reclamation-----	218	905	1,148	1,318	62	400	511	525

- Represents zero. X Not applicable. ¹ Includes estimates.

Source: U.S. Federal Power Commission, annual summaries and related monthly reports.

Electric Utilities

523

No. 869. ELECTRIC UTILITIES—BALANCE SHEET AND INCOME ACCOUNT OF PRIVATELY-OWNED COMPANIES; 1950 TO 1972

[In millions of dollars. Prior to 1960, excludes Alaska and Hawaii. Data cover reports of all companies with annual electric revenues over \$1 million representing about 98 percent of the privately-owned companies. See also *Historical Statistics, Colonial Times to 1957*, series V 128-142]

ITEM	1950	1955	1960	1965	1970	1971	1972
COMPOSITE BALANCE SHEET							
Assets and other debits	20,523	30,992	44,742	56,395	87,417	98,174	110,601
Electric utility plant	18,956	30,307	45,456	59,703	93,303	104,300	116,644
Provisions for depreciation and amortization ¹	9,832	5,718	8,889	13,651	20,253	22,006	23,804
Net electric utility plant	15,124	24,594	36,567	46,072	73,050	82,294	92,780
Other utility plant	2,485	3,402	4,852	6,613	8,974	9,536	10,234
Provisions for depreciation and amortization ¹	554	678	905	1,418	2,095	2,268	2,445
Net other utility plant	1,951	2,724	3,889	5,195	6,879	7,268	7,789
Total utility plant	21,441	33,709	50,308	66,315	102,277	118,836	128,878
Provisions for depreciation and amortization ¹	4,306	6,391	9,852	15,048	22,948	24,274	26,309
Net total utility plant	17,075	27,318	40,456	51,267	79,929	89,562	100,569
Other property and investments	1,237	933	1,004	1,247	1,742	2,245	2,507
Current and accrued assets	2,058	2,567	3,066	3,639	5,321	5,887	6,936
Deferred debits	153	174	216	242	425	480	580
Liabilities and other credits	20,523	30,992	44,742	56,395	87,417	98,174	110,601
Capital stock	7,621	10,404	13,322	15,668	20,782	23,919	27,463
Other paid-in capital	589	1,033	1,747	2,622	4,400	5,422	6,769
Retained earnings	1,346	2,191	3,736	5,712	9,363	10,129	11,295
Long-term debt	9,179	14,316	21,035	25,502	41,937	46,708	51,553
Current and accrued liabilities	1,527	2,381	3,112	4,222	7,309	7,918	8,752
Deferred credits and operating reserves	195	247	277	546	945	1,006	1,349
Contributions in aid of construction	68	109	188	294	483	557	626
Accumulated deferred income taxes	-	261	1,325	1,829	2,198	2,424	2,794
COMPOSITE INCOME ACCOUNTS							
Electric operating revenues	4,784	7,199	10,116	13,400	19,791	22,822	25,354
Electric operating expenses	3,828	5,702	7,917	10,298	15,310	17,353	19,715
Net electric operating revenues	956	1,497	2,199	3,104	4,481	4,969	5,639
Income from electric plant leased to others	5	3	2	3	(2)	(2)	(2)
Electric utility operating income	961	1,500	2,201	3,107	4,481	4,969	5,639
Other utility operating income	72	120	196	301	2,404	2,433	2,460
Total utility operating income	1,033	1,620	2,397	3,409	4,885	5,402	6,099
Other income	108	118	178	191	774	1,001	1,303
Total income	1,139	1,738	2,575	3,600	5,659	6,403	7,403
Income deductions	317	494	792	1,019	2,251	2,551	2,984
Net income	822	1,244	1,783	2,581	3,408	3,852	4,410

- Represents zero. ¹ Accumulated. ² Included with other utility operating income.

Source: U.S. Federal Power Commission, *Statistics of Privately Owned Electric Utilities in the United States*.

No. 870. LARGEST PUBLIC UTILITY COMPANIES—ASSETS, REVENUES, INCOME, AND STOCKHOLDERS' EQUITY, BY RANK OF ASSETS: 1973

[In millions of dollars, except percent. As of December 31 or calendar year, as applicable]

ASSET GROUP	INCLUDING TELEPHONE COMPANIES ¹				EXCLUDING TELEPHONE COMPANIES			
	Assets ²	Operating revenues ³	Net income	Stockholders' equity ⁴	Assets ²	Operating revenues ³	Net income	Stockholders' equity ⁴
50 largest	181,203	55,795	7,248	72,555	112,345	31,690	4,197	41,680
Lowest ten	12,677	3,690	494	4,840	12,677	3,590	494	4,840
Second ten	15,324	5,187	603	5,577	15,324	5,187	603	5,577
Third ten	19,089	6,141	703	6,733	17,282	5,563	645	6,265
Fourth ten	26,399	7,049	968	9,271	26,399	7,049	968	9,271
Highest ten	107,713	33,828	4,481	46,135	40,662	10,301	1,488	15,727
Percent of total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Lowest ten	7.0	6.4	6.8	6.7	11.3	11.3	11.8	11.6
Second ten	8.5	9.3	8.8	7.7	13.6	16.4	14.4	13.4
Third ten	10.5	11.0	9.7	9.3	15.4	17.6	15.4	15.0
Fourth ten	14.6	12.6	13.4	12.8	23.5	22.2	23.1	22.2
Highest ten	59.4	60.6	61.8	63.6	36.2	32.5	35.5	37.7

¹ American Telephone and Telegraph Co., and Continental Telephone Co.

² Total assets employed in business, net of depreciation; includes consolidated subsidiaries. ³ Gross receipts from operations during year; includes nonutility revenues from manufacturing, transportation, etc.

⁴ Capital stock, surplus, and retained earnings (i.e., net worth).

Source: Fortune, New York, N.Y., adapted from *The Fortune Directory*. (Copyright by Time Inc.)

No. 871. ELECTRIC LIGHT AND POWER INDUSTRY—ENERGY GENERATED, SALES, REVENUE, AND CUSTOMERS: 1950 TO 1973
 [Prior to 1960, excludes Alaska and Hawaii]

CLASS	1950	1955	1960	1965	1969	1970	1971	1972	1973
Energy generated ¹ ...bil. kw.-hr.	329	547	755	1,055	1,442	1,532	2,1,614	2,1,747	2,1,849
Sales to ultimate customers ² ...bil. kw.-hr.	281	481	683	953	1,307	1,391	1,466	1,578	1,703
Residential or domestic...bil. kw.-hr.	67	125	196	281	408	448	479	511	554
Percent of total	23.8	26.0	28.7	29.5	31.2	32.2	32.7	32.4	32.5
Commercial and industrial:									
Small light and power...bil. kw.-hr.	50	78	115	202	287	313	334	362	397
Large light and power...bil. kw.-hr.	139	258	345	433	557	573	593	640	687
Revenue from ultimate customers ³ ...bil. dol.	5.1	8.0	11.5	15.2	20.1	22.1	24.7	27.9	31.7
Residential or domestic...bil. dol.	1.9	3.3	4.9	6.3	8.5	9.4	10.5	11.7	13.2
Percent of total	38.0	41.4	42.2	41.8	42.4	42.7	42.4	42.0	41.7
Commercial and industrial:									
Small light and power...bil. dol.	1.3	1.9	2.8	4.3	5.7	6.3	7.1	8.0	9.1
Large light and power...bil. dol.	1.4	2.4	3.3	3.9	5.0	5.4	6.1	7.0	8.1
Ultimate customers, Dec. 31 ³ ...millions	45.0	52.6	58.9	65.6	70.9	72.5	74.3	76.2	78.5
Residential or domestic...millions	37.5	45.8	51.4	57.6	62.6	64.0	65.7	67.3	69.4
Commercial and industrial:									
Small light and power...millions	5.5	6.2	6.8	7.4	7.7	7.9	8.0	8.2	8.4
Large light and power...millions	.2	.4	.5	.3	.3	.4	.4	.4	.4
Avg. k.w.-hr. used per customer...1,000		4,6.9	9.3	11.7	14.7	18.6	19.4	20.0	22.0
Residential...1,000		4,2.0	2.8	3.9	4.9	6.6	7.1	7.4	8.1
Commercial, small light and power...1,000		4,10.4	12.7	17.0	27.4	37.0	40.0	41.9	47.6
Avg. annual bill per customer...dollars		4,123	155	198	234	286	308	337	408
Residential...dollars		4,57	73	95	111	137	148	162	192
Commercial, small light and power...dollars		4,265	316	418	584	735	803	889	988
Total	1,588.2	538.8	358.7	635.8					

¹ Source: U.S. Federal Power Commission. ² Preliminary. ³ Includes other types not shown separately. 1951 data.

Source: Except as noted, Edison Electric Institute, New York, N.Y., *Statistical Year Book*.

No. 872. ELECTRIC ENERGY SALES, BY CLASS OF SERVICE, AND BY STATES: 1972
 [In billions of kilowatt-hours]

STATE	Total ¹	Residential	Commercial	Industrial	STATE	Total ¹	Residential	Commercial	Industrial
Total	1,588.2	538.8	358.7	635.8	S.A.—Con.				
N.E.	64.6	25.4	17.9	19.8	W. Va.	16.1	4.6	2.5	9.5
Maine	5.8	2.1	1.0	2.5	N.C.	46.5	16.6	10.3	18.4
N.H.	4.4	1.9	.7	1.7	S.C.	25.3	8.3	4.1	12.1
Vt.	3.2	1.5	.6	1.0	Ga.	36.2	13.8	9.4	12.7
Mass.	28.4	11.0	8.9	7.9	Fla.	61.4	30.4	16.6	10.6
R.I.	4.5	1.6	1.4	1.4	E.S.C.	149.2	49.0	17.5	79.1
Conn.	18.2	7.3	5.4	5.3	Ky.	36.7	8.2	2.7	24.4
M.A.	219.9	67.1	55.6	86.2	Tenn.	55.5	10.1	6.5	28.9
N.Y.	93.8	27.8	29.6	27.5	Ala.	39.4	13.3	5.2	20.2
N.J.	42.4	13.6	12.4	16.0	Miss.	17.6	8.3	3.0	5.6
P.a.	83.7	25.7	13.7	42.6	W.S.C.	187.6	67.3	40.6	73.2
E.N.C.	313.4	96.6	62.8	142.9	Ark.	15.6	5.5	2.8	6.9
Ohio	98.0	25.3	18.6	53.2	La.	35.9	11.7	7.6	14.0
Ind.	43.5	15.3	7.5	20.6	Okla.	20.5	9.2	4.5	6.0
Ill.	80.2	25.5	20.2	29.6	Tex.	115.6	41.0	25.8	46.3
Mich.	63.7	19.4	12.2	20.8	Mt.	74.2	22.0	20.3	28.4
Wis.	27.9	11.1	6.4	9.7	Mont.	8.9	1.8	1.1	5.9
W.N.C.	102.7	42.3	21.9	35.1	Idaho	11.9	2.8	2.4	6.7
Minn.	23.3	9.9	3.3	9.7	Wyo.	3.6	.7	.7	2.1
Iowa	17.8	7.3	3.7	6.4	Colo.	12.9	4.7	5.3	2.3
Mo.	28.7	11.2	5.9	10.5	N. Mex.	6.6	1.8	2.1	2.2
N. Dak.	3.3	1.6	.6	1.0	Ariz.	17.4	5.8	4.9	5.6
S. Dak.	3.2	1.8	1.0	.3	Utah	6.1	2.0	1.8	1.8
Nebr.	11.0	4.6	3.3	2.3	Nev.	6.7	2.5	2.2	1.8
Kans.	15.4	6.0	4.2	4.9	Pac.	221.0	72.2	60.6	84.7
S.A.	255.6	96.9	61.4	86.5	Wash.	51.7	17.5	7.2	26.5
Del.	5.1	1.3	1.0	2.7	Oreg.	27.9	11.3	7.6	8.7
Md. ²	31.0	9.4	8.8	12.2	Calif.	135.3	41.2	44.4	47.2
Va.	33.9	13.0	8.7	8.3	Alaska	1.5	.7	.6	.1
					Hawaii	4.6	1.5	.8	2.2

¹ Includes "Other" service, not shown separately. ² Includes District of Columbia.

Source: U.S. Federal Power Commission, *Annual Report*, and unpublished data.

Gas Utility Industry

525

No. 873. GAS UTILITY AND PIPELINE INDUSTRY—BALANCE SHEET AND INCOME ACCOUNT: 1950 TO 1972

[In millions of dollars. Excludes Hawaii through 1955 and Alaska through 1960. Represents privately owned companies. Excludes operations of companies distributing gas in bottles or in tanks]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
COMPOSITE BALANCE SHEET								
Assets and other debits	9,010	15,435	24,570	32,845	42,952	45,625	49,730	52,785
Utility plant and adjustments	7,620	13,305	20,835	28,205	36,593	38,541	41,067	43,211
Investment and fund accounts	360	525	1,380	1,885	2,679	3,024	4,009	4,657
Current and accrued assets	970	1,465	2,185	2,545	3,328	3,674	4,198	4,388
Deferred debits ¹	60	140	170	210	352	386	456	520
Liabilities and other credits	9,010	15,435	24,570	32,845	42,952	45,625	49,730	52,785
Capital stock	2,405	3,905	5,785	7,115	7,862	8,345	9,302	9,710
Long-term debt	3,145	5,900	9,130	11,515	14,423	15,681	17,191	17,833
Current and accrued liabilities	735	1,390	2,420	3,035	4,902	4,832	4,777	5,066
Reserve for depreciation, retirements, depletion, etc.	1,740	2,775	4,570	7,205	10,010	10,696	11,894	12,858
Reserve for deferred income taxes	—	(⁴)	350	660	804	788	903	1,107
Capital surplus	135	200	145	175	239	390	(³)	(³)
Retained income	720	1,040	1,880	2,715	3,962	4,230	4,943	5,417
Other liabilities and credits	180	225	290	425	622	663	720	794
COMPOSITE INCOME ACCOUNT								
Operating revenues	2,553	5,063	8,606	11,525	14,806	16,380	18,062	19,747
Net operating income	371	665	1,109	1,462	1,958	2,074	2,307	2,492
Utility operating income	372	667	1,112	1,469	1,966	2,086	2,319	2,505
Gross income	405	715	1,222	1,626	2,264	2,384	2,651	2,860
Net income	317	509	830	1,107	1,459	1,427	1,638	1,793

¹ Represents zero.

⁴ Includes capital stock discount and expense and reacquired securities. Beginning 1960, reacquired securities are deducted from the appropriate capital account. ² Breakdown will not add to total because of error in reporting units. ³ Capital surplus included with capital stock. ⁴ Included in "Other liabilities and credits."

Source: American Gas Association, Arlington, Va., *Gas Facts*, annual. (Copyright.)

No. 874. GAS UTILITY INDUSTRY, SUMMARY, 1950 TO 1973, AND PROJECTIONS, 1975

[Excludes Hawaii through 1955 and Alaska through 1960. Covers natural, manufactured, mixed, and liquid petroleum gas. Based on questionnaire mailed to all privately owned gas utilities and municipally owned gas departments in the United States, except those with annual revenues less than \$25,000, which in the aggregate account for only a negligible portion of the industry]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973	1975
Customers¹	1,000	28,479	33,054	37,338	41,482	42,241	43,005	44,127	45,866
Residential	22,146	26,283	30,418	34,341	38,097	38,788	39,476	40,510	42,083
Commercial	1,730	2,048	2,458	2,790	3,131	3,199	3,264	3,352	3,604
Industrial	99	121	141	166	199	205	{ } 265	265	279
Other	17	28	37	41	55	49			
Sales² ... trillion B.t.u.³	4,209	6,659	9,288	11,980	16,044	16,680	17,110	17,057	17,256
Residential	1,384	2,239	3,188	3,999	4,923	5,040	5,148	5,255	5,888
Commercial	410	603	920	1,345	2,007	2,156	2,281	2,398	2,613
Industrial	2,289	3,535	4,710	6,146	8,439	8,613	8,798	} 9,134	8,755
Other	126	282	470	490	674	841	883		
Revenues² ... mil. dol.	1,948	3,450	5,617	7,407	10,283	11,355	12,488	(NA)	(NA)
Residential	1,177	2,007	3,177	4,030	5,207	5,635	6,105	(NA)	(NA)
Commercial	266	424	723	1,054	1,620	1,829	2,066	(NA)	(NA)
Industrial	480	638	1,563	2,148	3,181	3,568	3,955	(NA)	(NA)
Other	26	81	153	176	274	323	362	(NA)	(NA)
Gas mains mileage... 1,000	387	497	631	768	915	934	951	981	1,020
Field and gathering	33	46	56	62	67	67	67	67	67
Transmission	113	146	184	211	253	256	260	263	265
Distribution	242	305	391	405	596	611	624	651	688
Construction expenditures, total ... mil. dol.	1,198	1,345	1,845	1,935	2,506	2,419	2,822	3,382	2,867
Transmission	716	593	848	770	1,019	842	878	899	792
Distribution	299	500	696	824	913	888	1,081	1,104	1,092
Production and storage	144	198	216	225	370	511	894	1,198	851
General	39	54	85	116	205	178	169	181	182

NA. Not available. ¹ Yearly averages. ² Excludes sales for resale.

³ A British thermal unit is the quantity of heat required to raise the temperature of 1 pound of water 1° F. at or near its point of maximum density.

Source: American Gas Association, Arlington, Va., *Gas Facts*, annual. (Copyright.)

No. 875. GAS UTILITY INDUSTRY—CUSTOMERS, SALES, AND REVENUES, BY CLASS OF SERVICE, AND STATES: 1972

[See headnote, table 874]

REGION AND STATE	CUSTOMERS ¹ (1,000)				SALES ³ (trillion B.t.u. ⁴)				REVENUES ³ (mil. dol.)			
	Total ²	Residential	Commercial	Industrial	Total ²	Residential	Commercial	Industrial	Total ²	Residential	Commercial	Industrial
U.S.	43,005	39,476	3,264	210	17,110	5,148	2,280	8,798	12,488	6,106	2,066	3,955
N.E.	1,708	1,584	108	13	270	146	55	63	496	320	99	69
Maine	22	20	1	(Z)	2	1	1	(Z)	5	3	1	1
N.H.	54	49	5	(Z)	10	5	2	2	17	10	4	1
Vt.	16	15	1	(Z)	3	1	1	1	4	2	1	1
Mass.	1,060	986	63	9	165	92	35	33	303	201	60	35
R.I.	164	153	9	1	25	14	5	6	45	29	8	7
Conn.	392	361	29	3	66	33	12	20	123	75	24	24
M.A.	8,253	7,631	580	29	1,777	853	295	588	2,162	1,303	382	439
N.Y.	4,181	3,850	266	14	643	375	114	126	904	599	162	115
N.J.	1,709	1,616	177	6	314	162	64	95	436	272	93	70
Pa.	2,923	2,165	147	9	820	326	116	367	821	433	126	254
E.N.C.	9,911	9,111	749	48	4,218	1,649	736	1,781	3,532	1,801	645	1,058
Ohio	2,717	2,511	197	7	1,179	495	202	466	976	506	174	285
Ind.	1,185	1,024	106	4	543	166	78	296	426	188	73	162
Ill.	3,057	2,828	211	17	1,173	486	223	456	989	539	184	260
Mich.	2,126	1,947	169	11	940	376	179	374	799	404	158	231
Wis.	876	801	66	9	388	126	53	190	341	164	57	113
W.N.C.	3,626	3,273	320	30	1,824	544	275	942	1,168	560	213	373
Minn.	675	614	54	7	344	113	51	172	271	136	49	83
Iowa	659	586	71	2	321	101	60	141	225	107	43	63
Mo.	1,101	1,015	81	4	397	154	77	154	294	166	53	67
N. Dak.	62	54	7	(Z)	22	10	9	2	19	11	7	1
S. Dak.	86	76	10	(Z)	31	12	10	9	26	14	7	4
Nebr.	385	333	43	9	204	56	31	106	124	55	23	42
Kans.	658	595	54	8	505	97	37	360	200	72	21	113
S.A.	3,747	3,421	294	20	1,350	357	181	755	1,140	503	192	411
Del.	83	78	5	(Z)	25	9	4	11	26	14	4	7
Md.	744	690	47	5	167	75	21	67	205	123	28	51
D.C.	161	142	16	1	28	15	11	1	38	22	13	1
Va.	549	500	44	2	150	55	29	50	184	88	34	36
W. Va.	387	355	32	1	189	58	25	84	114	52	17	45
N.C.	316	272	37	3	166	29	18	112	135	42	21	67
S.C.	262	236	25	1	142	20	13	102	104	31	14	55
Ga.	854	786	61	6	326	81	39	203	235	101	34	98
Fla.	391	362	27	1	178	16	21	117	118	30	26	51
E.S.C.	2,034	1,840	178	7	955	214	119	582	597	230	96	252
Ky.	615	559	53	1	208	85	38	77	155	80	29	41
Tenn.	451	393	51	3	266	46	38	38	181	48	33	75
Ala.	607	562	42	1	251	52	28	170	189	70	23	76
Miss.	361	326	32	2	232	31	15	175	108	32	11	60
W.S.C.	4,945	4,487	414	38	3,305	431	199	2,403	1,242	399	118	650
Ark.	442	301	48	2	288	48	29	209	127	39	17	70
La.	925	858	62	3	668	69	27	560	235	62	15	144
Okla.	715	645	66	4	372	75	38	146	161	64	21	43
Tex.	2,863	2,593	238	29	1,976	241	106	1,483	727	234	64	342
Mt.	2,070	1,858	199	11	1,007	249	148	578	550	227	99	209
Mont.	159	141	17	1	83	26	17	37	47	23	11	13
Idaho	92	80	12	(Z)	51	9	8	32	39	14	8	10
Wyo.	86	75	10	(Z)	72	13	9	49	28	9	4	14
Colo.	637	565	70	2	287	87	50	140	150	68	37	44
N. Mex.	249	220	23	4	135	28	13	82	64	25	8	26
Ariz.	498	454	41	3	187	36	22	119	117	44	16	61
Utah	261	242	19	1	117	42	14	60	59	33	8	19
Nev.	88	81	7	(Z)	75	8	7	59	46	12	6	27
Pac.	6,711	6,273	423	15	2,404	705	274	1,106	1,601	761	222	494
Wash.	313	276	36	2	188	39	23	126	144	56	28	63
Oreg.	221	195	26	1	100	23	14	64	89	37	18	33
Calif.	6,120	5,751	358	12	2,088	636	220	903	1,313	656	170	392
Alaska	20	19	1	(Z)	25	6	7	11	16	8	4	4
Hawaii	36	32	2	2	3	1	1	1	9	3	2	4

Z. Less than 500.

¹ Averages for the year. ² Includes "Other" service, not shown separately.³ Excludes sales for resale. ⁴ For definition, see footnote 3, table 874.Source: American Gas Association, Arlington, Va., *Gas Facts*, annual. (Copyright.)

No. 876. WATER POWER—DEVELOPED AND ESTIMATED UNDEVELOPED, BY GEOGRAPHIC DIVISION: 1945 TO 1972

[In thousands of kilowatts. Prior to 1960, excludes Alaska and Hawaii. As of December 31. For composition of divisions, see fig. I, inside front cover]

ITEM AND DIVISION	1945	1950	1955	1960	1965	1970	1971	1972
DEVELOPED WATER POWER¹								
United States.....	15,892	18,675	25,742	33,180	42,948	51,952	53,404	53,778
New England.....	1,170	1,239	1,385	1,520	1,488	1,473	1,511	1,510
Middle Atlantic.....	1,068	1,078	1,789	2,472	4,237	4,264	4,252	4,252
East North Central.....	818	901	943	929	886	936	944	936
West North Central.....	617	629	902	1,594	2,574	2,728	2,726	2,724
South Atlantic.....	2,664	2,767	3,536	3,773	4,700	5,265	5,473	5,470
East South Central.....	2,229	2,729	3,576	3,750	4,438	5,224	5,225	5,267
West South Central.....	374	466	948	944	1,650	1,946	2,036	2,119
Mountain.....	2,007	2,286	3,706	4,621	5,551	6,202	6,219	6,235
Pacific.....	4,345	5,979	8,808	13,578	17,424	23,914	24,958	25,265
UNDEVELOPED WATER POWER								
United States.....	² 77,130	87,604	86,895	114,200	124,087	127,990	125,203	126,078
New England.....	3,348	3,250	2,586	2,900	3,240	3,330	3,318	3,315
Middle Atlantic.....	5,175	6,572	8,023	7,600	4,986	4,455	4,269	4,301
East North Central.....	2,574	2,344	3,051	3,000	1,351	1,576	1,305	1,318
West North Central.....	4,735	5,775	6,284	6,400	4,146	4,300	4,329	4,329
South Atlantic.....	7,462	8,151	7,943	8,400	9,977	9,556	9,059	8,965
East South Central.....	4,552	4,736	3,707	4,600	4,287	3,810	3,877	3,832
West South Central.....	2,804	3,608	3,506	3,900	3,056	3,279	3,029	3,009
Mountain.....	17,755	23,440	20,668	23,600	26,530	26,655	26,174	25,518
Pacific.....	28,635	29,768	31,127	53,800	66,514	70,939	69,843	71,491

¹ Capacity as shown by nameplate ratings at existing plants of electric utilities and industrials. Excludes installed capacity at pumped storage projects which totaled 4,110 megawatts as of Dec. 31, 1972. ² 1947 data.

Source: U.S. Federal Power Commission, annual summaries and related monthly reports.

No. 877. NUCLEAR POWER PLANT CAPACITY, 1960 TO 1973, AND PROJECTIONS, 1975 AND 1980

[In net megawatts, except percent]

ITEM	1960	1965	1969	1970	1971	1972	1973	1975	1980
Existing nuclear capacity, year end.....	381	1,027	4,272	7,408	10,041	14,828	20,105	54,200	131,600
Percent of total electric utility capacity.....	0.2	0.4	1.4	2.2	2.7	3.7	4.6	11.4	10.8
Nuclear capacity added and ordered during year.....	534	5,153	14,934	24,812	27,244	51,905	63,351	(X)	(X)
Placed in commercial operation.....	200	87	1,265	1,726	3,459	5,546	5,277	11,900	28,300
Construction initiated.....	317	625	6,406	8,814	3,832	6,608	15,126	(X)	(X)
Ordered from manufacturers.....	17	4,441	7,203	14,272	10,953	39,751	42,948	(X)	(X)

X Not applicable.

Source: U.S. Atomic Energy Commission, various releases and unpublished data.

No. 878. ATOMIC ENERGY COMMISSION—SELECTED DATA ON NUCLEAR REACTORS,
URANIUM, RADIOISOTOPES, AND HEAVY WATER: 1965 TO 1973

[For years ending June 30, except as noted]

ITEM	1965	1968	1969	1970	1971	1972	1973
NUCLEAR REACTORS							
Electrical generation: ¹							
Capacity..... net electrical megawatts..	1,027	2,724	4,272	7,498	10,041	14,828	20,105
Gross output..... 1,000 megawatt hours..	4,368	13,974	16,388	23,750	40,724	57,705	88,007
Development costs..... mil. dol.	192	253	232	220	221	290	332
Central station..... mil. dol.	90	121	123	125	131	178	211
Cooperative power reactors..... mil. dol.	12	31	9	7	8	6	5
Technology and engineering..... mil. dol.	54	60	60	53	48	60	59
Nuclear safety..... mil. dol.	19	31	32	35	34	46	57
Other..... mil. dol.	17	10	8	—	—	—	—
URANIUM							
AEC procurement:							
Quantity..... tons of U ₃ O ₈ ..	15,313	7,737	7,124	4,000	² 1,206	(2)	(2)
Cost..... mil. dol.	265	124	100	49	15	(2)	(2)
Est. ore reserves ³ 1,000 tons of contained U ₃ O ₈ ..	145	161	204	243	275	273	273
Rated ore milling capacity ³ 1,000 tons per day..	12	18	26	28	28	32	30
RADIOISOTOPES							
Sales by AEC..... \$1,000..	1,601	1,473	1,122	1,206	1,211	998	871
Exports (domestic) ⁴ \$1,000..	3,026	3,918	5,305	4,847	6,710	8,733	12,308
Imports ⁴ \$1,000..	2,818	3,241	4,097	3,471	5,671	4,443	5,537
HEAVY WATER							
Sales by AEC..... tons..	82	98	348	620	770	276	420
Value..... \$1,000..	4,067	4,822	17,284	34,633	43,002	14,517	34,833

¹ Calendar year data.

² Program phased out in Dec. 1970.

³ As of December.

⁴ Source: U.S. Bureau of the Census, 1965, *U.S. Exports of Radioactive and Stable Isotopes*, FT 9523, and *U.S. Imports of Radioactive Substances*, FT 9068; thereafter, *U.S. Exports, Schedule B Commodity and Country*, FT 410 and *U.S. Imports for Consumption and General Imports, TSUSA Commodity and Country*, FT 246. Export figure, include shipments made by AEC and by commercial firms.

Source: Except as noted, U.S. Atomic Energy Commission, *Annual Report*, and unpublished data.

No. 879. ATOMIC ENERGY COMMISSION—FINANCES AND EMPLOYMENT: 1965 TO 1973

[Money figures in millions of dollars. For years ending June 30. Minus sign (—) denotes net income]

ITEM	1965	1967	1968	1969	1970	1971	1972	1973
Appropriations received.....	2,625	2,199	2,509	2,616	2,222	2,308	2,293	2,633
Operations.....	2,262	1,923	2,140	2,109	1,867	1,929	1,952	2,139
Plant and capital equipment.....	363	276	369	507	355	379	341	494
Plant investment, year end.....	8,871	9,062	9,127	9,454	9,728	9,925	10,152	10,489
Completed plant.....	8,470	8,820	8,827	9,012	9,173	9,286	9,507	9,726
Production plants.....	5,464	5,368	5,310	5,338	5,407	5,420	5,620	5,632
Research and development facilities.....	2,370	2,841	2,926	3,077	3,170	3,281	3,382	3,444
Other.....	636	611	501	602	506	585	605	649
Construction in progress.....	401	242	300	442	555	638	645	763
Cost of operations.....	2,570	2,446	2,507	2,566	2,504	2,501	2,675	2,676
Nuclear materials.....	832	683	632	594	537	514	641	599
Weapons development and fabrication.....	763	737	784	900	899	941	962	976
Naval reactor development.....	102	105	124	138	139	155	157	167
Civilian reactor development.....	242	262	291	275	253	250	290	332
Applied energy technology.....	20	22	28	23	24	16	15	17
Space nuclear systems.....	194	161	134	105	104	98	63	46
Physical research.....	214	267	282	302	304	295	286	300
Controlled thermonuclear.....	23	25	28	30	32	32	36	43
Biomedical and environmental research.....	84	95	99	99	100	99	100	104
Regulation.....	5	5	7	9	12	16	28	48
Administrative expenses.....	76	84	90	99	112	120	123	123
Miscellaneous expenses and income, net.....	15	—	8	2	-12	-35	-26	-79
Employment.....	133,912	130,101	129,959	127,212	122,472	115,174	112,895	112,540
Federal Government.....	7,329	7,505	7,665	7,467	7,548	7,403	7,392	7,630
Contractor operating.....	114,783	113,619	111,846	108,856	105,995	99,207	96,695	95,193
Contractor construction and design.....	11,800	8,976	10,448	10,889	8,929	8,559	8,803	9,712

— Represents zero.

Source: U.S. Atomic Energy Commission, *Financial Report*.

Section 20

Science

This section presents statistics relating to various aspects of scientific and technical activity. Major topics are research and development, training and employment of scientists and engineers, space vehicles, and patents and trademarks. Principal sources of these data are the National Science Foundation and the National Aeronautics and Space Administration.

The National Science Foundation gathers data chiefly through recurring statistical surveys. Some current Foundation publications containing data on funds for research and development and on scientific and engineering personnel include the occasional bulletin series, *Reviews of Data on Science Resources*; annual and biennial reports such as *Federal Funds for Research, Development, and Other Scientific Activities*; *Research and Development in Industry*; *National Patterns of R & D Resources*; *Resources for Scientific Activities at Universities and Colleges*; *An Analysis of Federal R & D Funding by Function*; *Scientists, Engineers, and Physicians From Abroad*; *Federal Scientific, Technical, and Health Personnel*; *Graduate Science Education*; *Student Support and Postdoctorates*; *Federal Support to Universities, Colleges, and Selected Nonprofit Institutions*; *Scientific Activities of Independent Nonprofit Institutions*; *Research and Development in State Government Agencies*; and policy reports relating to national allocation of manpower and funds to science and technology. Statistical surveys in these areas pose particularly difficult problems of concept and definition and the data should, therefore, be regarded as broad estimates rather than precise quantitative statements. Detailed discussions of the scope and limitations of the data appear in the source publications.

The National Aeronautics and Space Administration does not publish any statistical reports as such. NASA's *Semiannual Report* contains current data on finances and its biweekly *Satellite Situation Report* presents information on artificial satellites, including both objects in orbit and decayed objects.

Other sources of statistics on scientific and technical activities include *The Budget of the United States Government*, which contains summary financial data on all Federal research and development programs and the *Annual Report of the Commissioner of Patents*, issued by the Department of Commerce's Patent Office and presenting data on patent applications and issuances and on trademark registrations and renewals.

Research and development.—The National Science Foundation defines research as a "systematic and intensive study directed toward a fuller knowledge of the subject studied" and development as "the systematic use of scientific knowledge directed toward the production of useful materials, devices, systems, methods, or processes." The data on funds are presented within the framework of a national economic structure composed of four sectors: (1) The *government sector*, made up primarily of Federal executive agencies; (2) the *industry sector*, consisting of manufacturing and nonmanufacturing firms and the Federally Funded Research and Development Centers they administer; (3) the *colleges and universities sector*, composed of colleges, universities, and their affiliated institutions, agricultural experiment stations and associated schools of agriculture, and Federally Funded Research and Development Centers administered by educational institutions; and (4) the *other nonprofit institutions sector*, consisting of such organizations as private philanthropic foundations, nonprofit research insti-

tutes, voluntary health agencies, and Federally Funded Research and Development Centers administered by nonprofit organizations. The federally funded centers are research and development organizations which are exclusively or substantially financed by the Federal government and which, in most instances, were originally established to meet a particular research and development need of the Government. They are administered on a contractual basis, by companies, educational institutions, or other nonprofit organizations. The research and development funds reported consist of current operating costs, including those for planning and administration, except as otherwise noted. They exclude funds for routine testing, mapping and surveying, collection of general-purpose data, dissemination of scientific information, and training of scientific manpower.

Scientists, engineers, and technicians.—Scientists and engineers are defined as persons engaged in scientific and engineering work at a level requiring a knowledge of sciences equivalent at least to that acquired through completion of a 4-year college course. They are generally classified according to the fields of their employment and not according to the discipline in which they received their major training. Technicians are defined as persons engaged in technical work at a level requiring knowledge acquired through a technical institute, junior college, or other type of training less extensive than 4-year college training. Craftsmen and skilled workers are excluded.

Historical statistics.—Tabular headnotes provide cross-references, where applicable, to *Historical Statistics of the United States, Colonial Times to 1957*. See preface.

No. 880. RESEARCH AND DEVELOPMENT—DEFENSE, SPACE, AND OTHER OUTLAYS: 1955 TO 1974

[Includes basic research, applied research, and development. Defense related outlays comprise all research and development spending by Dept. of Defense including space activities, and a portion of Atomic Energy Commission funds. Space related outlays are those of the National Aeronautics and Space Administration; they exclude space activities of other Federal agencies, estimated at less than 5 percent of all space research and development spending]

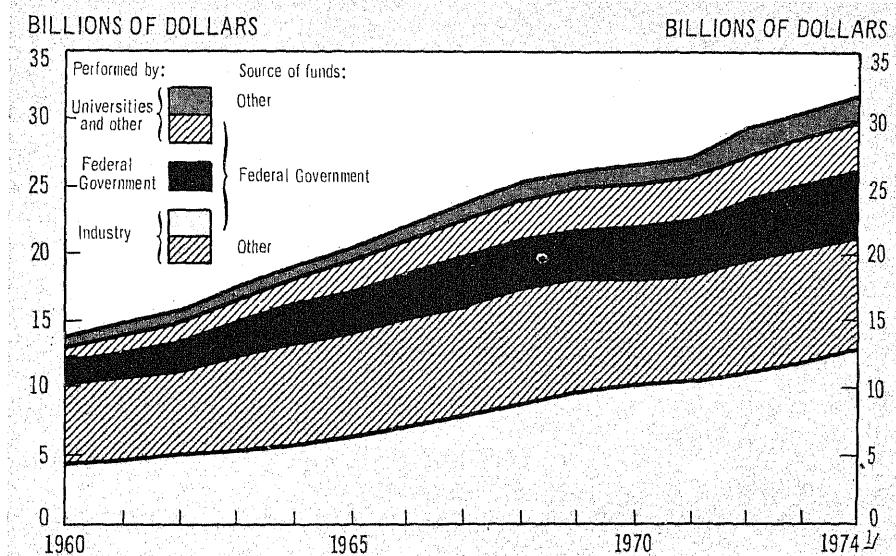
YEAR	RESEARCH AND DEVELOPMENT OUTLAYS		AS PERCENT OF TOTAL RESEARCH AND DEVELOPMENT					
	Total (mill. dol.)	Percent year-to- year change	Defense-space related			Other outlays		
			Total	Defense	Space	Total	Non- federal	Federal
1955	6,279	(X)	48.4	47.4	1.0	51.6	44.1	7.5
1956	8,483	35.1	49.5	48.6	0.9	50.5	42.7	7.8
1957	9,912	16.8	53.2	52.2	1.0	46.8	38.3	8.5
1958	10,870	9.7	53.0	52.0	1.0	47.0	37.5	0.5
1959	12,540	15.4	55.8	53.3	2.5	44.2	35.7	8.5
1960	13,730	9.5	54.7	51.6	3.1	45.3	36.3	9.0
1961	14,552	6.0	54.7	49.2	5.5	45.3	36.3	9.0
1962	15,665	7.6	53.7	47.0	6.7	46.3	36.7	9.6
1963	17,371	10.9	54.3	40.6	13.7	45.7	35.4	10.3
1964	19,214	10.6	54.6	36.1	18.5	45.4	34.7	10.7
1965	20,439	6.4	52.7	32.3	20.4	47.3	36.2	11.1
1966	22,264	8.9	51.0	32.0	19.0	49.0	37.1	11.9
1967	23,613	6.1	48.2	38.9	14.3	51.8	39.0	12.8
1968	25,119	6.4	47.0	33.9	13.1	53.0	40.5	12.5
1969	26,169	4.2	44.6	33.5	11.1	55.4	43.0	12.4
1970	26,545	1.4	42.3	32.1	10.2	57.7	44.4	13.3
1971	27,336	3.0	40.1	31.0	9.1	59.9	45.1	14.8
1972 (prel.)	29,208	6.8	40.1	29.5	10.5	60.0	44.8	15.2
1973 est	30,630	4.9	38.9	28.7	10.2	61.1	45.8	15.3
1974 est	32,100	4.8	37.9	28.9	9.0	62.1	46.9	15.2

X. Not applicable.

Source: U.S. National Science Foundation, *National Patterns of R & D Resources—Funds and Manpower in the United States, 1953–74*, annual.

FIG. XXXV. RESEARCH AND DEVELOPMENT FUNDS, BY PERFORMANCE SECTOR AND BY SOURCE: 1960 TO 1974

[See table 881]

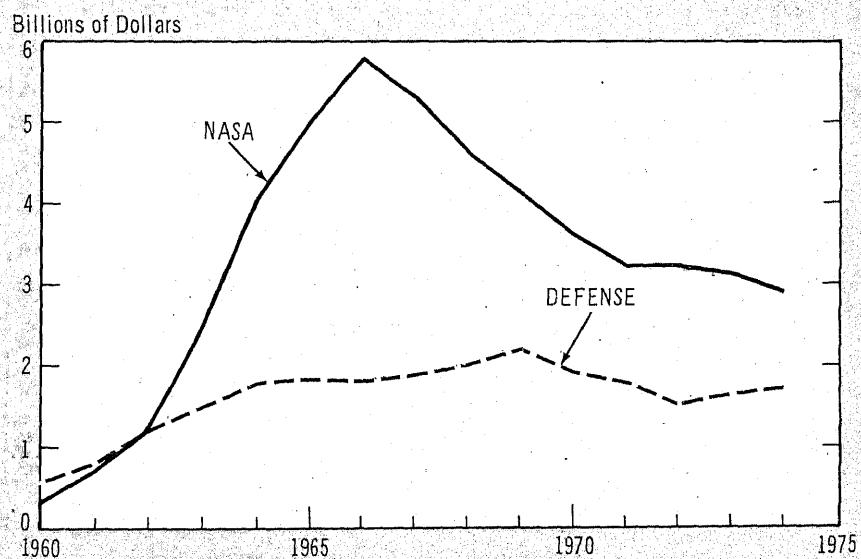


¹ 1972-1974 estimated.

Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. National Science Foundation.

FIG. XXXVI. EXPENDITURES FOR FEDERAL SPACE PROGRAM: 1960 TO 1974

[See table 906]



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Office of Management and Budget.

No. 881. FUNDS FOR PERFORMANCE OF RESEARCH AND DEVELOPMENT AND BASIC RESEARCH, BY SECTOR, DISTRIBUTED BY SOURCE: 1955 TO 1974

In millions of dollars. Data primarily on calendar year basis—data for calendar year 1955 for industry and other nonprofit institutions combined with Federal and university data for fiscal 1955 (1954–55); same pattern followed for subsequent years. Data refer, in general, to natural sciences including engineering and to social sciences in all but industry sector. Excludes capital expenditures data. Expenditures at associated Federally Funded Research and Development Centers administered by industry and other nonprofit institutions included in totals of respective sectors]

PERFORMANCE SECTOR AND SOURCE OF FUNDS	1955	1960	1965	1969	1970	1971	1972 (prel.)	1973 (est.)	1974 (est.)
Total research and development¹	6,279	18,730	20,439	26,169	26,545	27,336	29,208	30,630	32,100
Percent Federal as source	55.9	63.7	63.8	57.0	55.6	54.0	55.2	54.2	53.1
Federal Government	905	1,726	3,093	3,501	3,853	4,156	4,496	4,650	4,800
Industry	4,640	10,509	14,185	18,318	18,062	18,382	19,521	20,450	21,525
Federal funds	2,180	6,081	7,740	8,451	7,779	7,685	8,274	8,350	8,525
Industry funds	2,460	4,428	6,445	9,867	10,283	10,647	11,247	12,100	13,000
Universities and colleges	409	825	1,822	2,695	2,835	3,070	3,327	3,615	3,810
Federal funds	169	405	1,073	1,595	1,648	1,724	1,833	2,030	2,130
Industry funds	25	40	41	60	61	70	75	82	90
University and college funds ²	185	328	615	895	961	1,099	1,228	1,300	1,385
Other nonprofit institutions funds ²	30	52	93	145	165	177	186	197	205
Universities and colleges, associated Federally Funded R and D Centers	180	360	629	725	737	716	764	815	850
Other nonprofit institutions	145	310	710	930	1,058	1,062	1,100	1,100	1,115
Federal funds	75	180	498	640	748	732	760	750	755
Industry funds	28	40	53	81	90	100	105	110	115
Other nonprofit institutions funds ³	42	90	159	209	220	230	235	240	245
Total research, basic and applied	2,133	4,419	7,390	9,386	9,940	10,180	10,643	11,347	11,875
Percent Federal as source	52.9	54.7	60.5	57.2	57.6	56.1	55.9	55.5	55.0
Federal Government	400	756	1,454	1,766	2,024	2,012	2,097	2,140	2,220
Industry	1,117	2,405	3,250	3,905	4,028	4,013	4,064	4,455	4,695
Federal funds	395	912	1,224	1,175	1,207	1,108	1,050	1,205	1,245
Industry funds	722	1,493	2,026	2,730	2,821	2,905	2,984	3,250	3,450
Universities and colleges	392	791	1,765	2,588	2,723	2,958	3,216	3,450	3,640
Federal funds	161	387	1,086	1,520	1,564	1,641	1,758	1,922	2,015
Industry funds	24	37	39	55	56	65	70	76	83
University and college funds ²	178	317	600	878	948	1,085	1,212	1,276	1,350
Other nonprofit institutions funds ²	29	50	90	135	155	167	176	185	192
Universities and colleges, associated Federally Funded R and D Centers	114	219	412	485	485	470	476	508	530
Other nonprofit institutions	110	249	509	642	680	727	790	785	790
Federal funds	58	145	344	422	450	482	535	520	520
Industry funds	20	29	41	61	65	70	75	80	85
Other nonprofit institutions funds ³	32	75	124	159	165	175	180	185	185
Total basic research	608	1,326	2,853	3,758	3,943	4,000	4,237	4,434	4,615
Percent of total research and development	9.7	9.7	14.0	14.4	14.9	14.6	14.5	14.5	14.4
Percent Federal as source	47.0	52.3	63.7	63.5	62.6	50.8	59.7	60.3	60.0
Federal Government	90	160	424	565	646	535	607	615	620
Industry	189	376	592	618	620	625	705	770	770
Federal funds	27	79	186	160	158	131	125	155	170
Industry funds	162	297	406	458	471	494	500	550	600
Universities and colleges	237	576	1,419	2,087	2,194	2,355	2,510	2,555	2,660
Federal funds	103	299	879	1,275	1,296	1,349	1,419	1,472	1,540
Industry funds	16	24	26	39	40	46	51	55	60
University and college funds ²	99	215	446	678	748	841	914	901	925
Other nonprofit institutions funds ²	19	38	69	95	110	110	126	130	135
Universities and colleges, associated Federally Funded R and D Centers	49	97	208	275	260	260	250	286	295
Other nonprofit institutions	43	117	210	213	205	225	245	270	270
Federal funds	17	58	120	111	100	115	130	145	145
Industry funds	5	10	16	22	25	25	25	30	30
Other nonprofit institutions funds ³	21	49	74	80	80	85	90	95	95

¹ Basic research, applied research, and development.

² Includes State and local government funds received by these institutions and used for research and development.

³ Includes estimates for independent nonprofit hospitals and voluntary health agencies.

Source: U.S. National Science Foundation, *National Patterns of R & D Resources—Funds and Manpower in the United States, 1965–74*, annual.

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No. 882. FEDERAL OBLIGATIONS FOR RESEARCH AND DEVELOPMENT, BY FUNCTION: 1969 TO 1974

[In millions of dollars. For years ending June 30. Excludes research and development plant]

FUNCTION	1969	1970	1971	1972	1973	1974
					(est.)	(est.)
Total	15,641	15,340	15,564	16,553	16,966	17,383
National security	8,354	7,976	8,106	8,898	8,051	9,420
Space	3,732	3,510	2,893	2,714	2,691	2,458
Health	1,130	1,128	1,348	1,501	1,624	1,677
Transportation and communications	461	593	822	667	733	765
Science and technology base	518	580	592	606	619	654
Natural resources	413	464	555	688	696	624
Environment	293	330	405	479	566	589
Energy development and conversion	328	317	324	383	402	526
Education	158	151	198	208	245	253
Area and community development and housing	49	91	108	102	117	126
Economic growth and productivity	72	98	109	79	96	120
Income security and social services	93	101	121	113	130	77
Crime prevention and control	5	9	10	25	36	54
International cooperation and development	27	32	32	30	29	33

Source: U.S. National Science Foundation, *An Analysis of Federal R & D Funding by Function, 1969-74*.

No. 883. FEDERAL OBLIGATIONS FOR RESEARCH AND DEVELOPMENT: 1960 TO 1974

[In millions of dollars. For years ending June 30. Excludes research and development plant. For any given year, obligations differ from expenditures (see table 884) because not all funds are expended during year obligated]

ITEM	1960	1965	1968	1969	1970	1971	1972	1973	1974 ¹
Total R and D	7,552	14,614	15,921	15,641	15,340	15,564	16,553	16,804	17,933
Basic research	610	1,690	2,056	2,077	2,042	2,132	2,411	6,472	7,281
Applied research	1,331	3,184	3,304	3,151	3,555	3,942	4,188		
Development	5,611	9,760	10,501	10,413	9,748	9,490	9,974		
Total research	1,941	4,854	5,361	5,228	5,597	6,074	6,579	6,472	7,281
Life sciences	511	1,167	1,538	1,490	1,533	1,673	1,982	(NA)	(NA)
Psychological sciences	38	103	98	104	114	116	126	(NA)	(NA)
Physical sciences	{ 1,029	1,132	1,160	1,012	1,042	1,139	(NA)	(NA)	(NA)
Environmental sciences									
Mathematical sciences	25	105	119	115	102	120	141	(NA)	(NA)
Engineering sciences	690	1,576	1,572	1,509	1,980	2,040	1,974	(NA)	(NA)
Social sciences	35	127	195	215	200	334	310	(NA)	(NA)
Other sciences	33	70	52	80	72	103	116	(NA)	(NA)

NA Not available.

¹ Estimated.

No. 884. FEDERAL EXPENDITURES FOR RESEARCH AND DEVELOPMENT, AND RESEARCH AND DEVELOPMENT PLANT, BY AGENCY: 1960 TO 1974

[In millions of dollars. For years ending June 30. Includes social science research. Expenditure data in this table differ from those in table 881 because of the difference between Federal fiscal year reports and predominantly calendar year reporting by other sectors. See also *Historical Statistics, Colonial Times to 1957*, series W 79-94]

AGENCY	RESEARCH AND DEVELOPMENT					R AND D PLANT				
	1960	1965	1970	1973	1974 ¹	1960	1965	1970	1973	1974 ¹
Total ²	7,300	13,811	15,157	16,786	17,588	444	1,077	579	623	895
Departments:										
Agriculture	121	200	285	340	380	11	6	14	9	10
Commerce	30	58	123	179	192	3	28	5	6	10
Defense ²	5,553	6,628	7,447	8,417	8,676	101	100	141	157	175
Army	1,086	1,401	1,753	1,085	2,012	43	20	18	46	37
Navy	1,277	1,307	2,151	2,466	2,623	24	23	22	33	48
Air Force	2,958	3,360	3,089	3,533	3,574	20	45	62	55	68
Health, Educ., and Welfare	292	681	1,218	1,791	2,191	32	57	43	49	72
National Institutes of Health	256	555	877	1,327	1,643	31	40	41	27	58
Interior	63	109	152	235	283	2	10	8	16	53
Transportation	-	-	269	312	342	-	-	4	25	30
Atomic Energy Commission ³	762	1,241	1,346	1,363	1,431	224	279	270	261	386
Environmental Protection Agency	-	-	68	145	180	-	-	2	3	9
National Aero. and Space Admin.	347	4,562	3,697	3,271	3,104	54	521	57	45	75
National Science Foundation	58	150	203	428	460	7	57	31	43	48
Veterans Administration	15	37	58	75	85	4	4	4	8	9

- Represents zero.
^ Represents zero.
¹ Estimated.
² Data represent accrued costs rather than expenditures.

² Includes agencies not shown separately.

Source of tables 883 and 884: U.S. National Science Foundation, *Federal Funds for Research, Development, and Other Scientific Activities*, annual, and U.S. Office of Management and Budget, *The Budget of the United States Government, 1975, Special Analysis O, Federal Research and Development Programs*.

**No. 885. FUNDS FOR PERFORMANCE OF INDUSTRIAL RESEARCH AND DEVELOPMENT,
BY CHARACTER OF WORK, 1960 TO 1972, AND BY INDUSTRY, 1972**

[In millions of dollars. Includes performance of Federally Funded Research and Development Centers administered by industrial firms, classified by industry of the administering company. Excludes performance by certain industry-oriented organizations, such as trade associations, that account annually for less than 1 percent of the total. Excludes funds for research and development capital and the social sciences]

YEAR AND INDUSTRY	Total	RESEARCH			Development
		Total	Basic	Applied	
1960	10,509	2,405	376	2,029	8,104
1965	14,185	3,230	592	2,658	10,984
1970	18,062	4,028	629	3,399	14,084
1971	18,314	4,013	625	3,388	14,301
1972	19,521	4,064	625	3,439	15,457
Chemicals and allied products	1,913	1,018	250	763	901
Petroleum refining and extraction	475	246	24	222	229
Electrical equipment and communication	4,875	891	156	735	3,984
Aircraft and missiles	5,177	496	53	443	4,681
All other	7,081	1,418	142	1,276	5,662

¹ Excludes geological and geophysical exploration activities of petroleum companies.

**No. 886. FUNDS FOR PERFORMANCE OF INDUSTRIAL RESEARCH AND DEVELOPMENT,
BY INDUSTRY AND SOURCE OF FUNDS: 1963 TO 1972**

[In millions of dollars. Covers basic research, applied research and development. See headnote, table 885]

ITEM	1963	1965	1970			1972		
			Total	Fed- eral	Pri- vate indus- try	Total	Fed- eral	Pri- vate indus- try
Total	12,630	14,185	18,062	7,779	10,283	19,521	8,274	11,247
Food and kindred products	130	151	235	3	232	257	2	255
Textiles and apparel	30	38	58	(NA)	(NA)	59	(NA)	(NA)
Lumber, wood products, and furniture	11	12	48	-	48	57	-	57
Paper and allied products	69	77	178	(NA)	(NA)	184	(NA)	182
Chemicals and allied products	1,239	1,390	1,766	180	1,586	1,913	196	1,719
Petroleum refining and extraction	317	434	515	22	493	475	15	402
Rubber products	156	166	220	22	198	259	27	232
Stone, clay, and glass products	100	117	157	2	155	165	3	163
Primary metals	183	213	275	10	265	268	13	255
Fabricated metal products	153	145	200	6	194	241	9	231
Machinery	958	1,128	1,649	239	1,410	1,962	323	1,634
Electrical equip. and communication	2,866	3,168	4,352	2,261	2,091	4,875	2,519	2,355
Motor veh. and other transp. equip.	1,090	1,223	1,582	308	1,274	1,994	310	1,684
Aircraft and missiles	4,712	5,098	5,245	4,032	1,213	5,177	4,250	927
Professional and scientific instruments	284	388	745	204	541	781	164	627
All other industries	330	443	837	(NA)	(NA)	854	(NA)	(NA)

- Represents zero. NA Not available.

**No. 887. RESEARCH AND DEVELOPMENT SCIENTISTS AND ENGINEERS—MAN-YEARS
AND COST, BY INDUSTRY AND SOURCE OF SUPPORT: 1972**

INDUSTRY	Total	Company	FEDERAL			
			Total	Dept. of Defense	Nat'l Aero. and Space Admin.	All other agencies
Man-years of R and D scientists and engineers	355,600	235,400	120,200	87,300	18,000	14,900
Chemicals and allied products	41,300	38,200	3,100	900	(NA)	(NA)
Machinery	41,900	35,700	6,200	4,000	1,200	1,000
Electrical equipment and communication	90,500	51,700	38,800	28,300	4,000	6,500
Motor veh. and other transportation equip.	29,400	24,100	5,300	4,000	(NA)	(NA)
Aircraft and missiles	72,100	17,400	54,700	41,900	10,100	2,700
Other industries	80,400	68,100	12,300	8,200	(NA)	(NA)
Cost (per scientist or engineer)	54,800	48,200	67,300	67,300	65,400	69,800
Chemicals and allied products	46,300	44,800	63,200	56,700	(1)	(1)
Machinery	46,900	45,500	54,700	58,000	55,330	37,000
Electrical equipment and communication	54,700	47,200	64,500	61,400	69,000	75,200
Motor veh. and other transportation equip.	67,500	69,700	57,200	59,500	(1)	(1)
Aircraft and missiles	69,600	54,300	74,400	75,300	71,800	70,400
Other industries	45,100	43,200	55,200	55,900	(1)	(1)

NA Not available. ¹ Includes data for industries not available separately.

Source of tables 885-887: U.S. National Science Foundation, *Research and Development in Industry*, annual.

No. 888. INDUSTRIAL RESEARCH AND DEVELOPMENT FUNDS, BY GEOGRAPHIC DIVISION: 1969 TO 1972

[Amounts in millions of dollars. See headnote, table 885. For States in each division, see fig. I, inside front cover]

GEOGRAPHIC DIVISION	1969		1970		1971		1972			
	Total	Percent	Total	Percent	Total	Percent	Total	Percent	Federal	Company
United States	18,318	100	18,062	100	18,311	100	19,437	100	8,090	11,347
New England	1,835	10	1,854	10	1,884	10	1,960	10	954	1,006
Middle Atlantic	4,260	23	4,479	25	4,626	25	4,927	25	1,629	3,298
East North Central	3,570	19	3,622	20	3,833	21	4,161	21	402	3,759
West North Central	646	4	766	4	1,007	5	1,068	6	571	498
South Atlantic	1,466	8	1,424	8	1,455	8	1,610	8	850	738
East South Central	364	2	346	2	342	2	354	2	203	151
West South Central	658	4	571	3	551	3	578	3	153	425
Mountain	651	4	687	4	650	4	689	5	386	303
Pacific	4,868	27	4,313	24	3,964	22	4,082	21	2,912	1,169

Source: U.S. National Science Foundation, *Research and Development in Industry*, annual.

No. 889. RESEARCH AND DEVELOPMENT EXPENDITURES FOR SPECIFIED COUNTRIES, 1971, AND BY GOVERNMENT OBJECTIVE, 1969

[In billions of U.S. dollars]

ITEM	U.S.	France ¹	West Germany	U.K.	Japan	U.S.S.R. ²
Total R and D expenditures, 1971.....	bil. dol.	27.3	3.02	4.62	2.91	4.76
As percent of GNP.....		2.59	1.75	2.01	2.11	1.83
Government R and D expenditures, 1969.....	bil. dol.	11.1	.6	.4	1.1	.2
By objective: ³						(NA)
National defense.....	percent	49	31	19	40	2
Space.....	percent	24	7	6	4	1
Community services.....	percent	12	3	2	4	(NA)
Economic development.....	percent	7	16	2	26	(NA)
Nuclear energy.....	percent	6	18	17	12	8
Advancement of science ⁴	percent	2	24	39	13	61
Scientists and engineers engaged in R and D population, 1971.....	per 10,000	26	12	15	(NA)	25

NA. Not available.

¹ Gross expenditures for R&D, including physical plant, training, etc.² Estimates by Robert W. Campbell, University of Indiana.³ West Germany reports miscellaneous expenditures, not shown separately, that account for 15 percent of the total expenditure.⁴ Theoretical or basic research with no specific practical application in mind.

Source: Except as noted, U.S. National Science Foundation and Organization for Economic Cooperation and Development.

No. 890. FEDERAL OBLIGATIONS TO UNIVERSITIES AND COLLEGES: 1965 TO 1973

[Money figures in millions of dollars. For years ending June 30. Minus sign (-) denotes decrease]

ITEM	1965	1967	1968	1969	1970	1971	1972	1973 (proj.)
Total Federal obligations.....	2,306	3,311	3,380	3,453	3,227	3,487	4,131	3,844
Percent annual change.....	41.9	10.0	2.1	2.2	-6.6	8.1	18.4	-6.9
Academic science obligations.....	1,816	2,324	2,350	2,361	2,188	2,343	2,599	2,482
Percent of total.....	78.8	70.2	69.5	68.4	67.8	67.2	62.9	64.6
Research and development.....	1,095	1,301	1,398	1,475	1,447	1,551	1,853	1,890
Research and development plant.....	126	111	96	55	45	30	37	43
Other science activities.....	505	911	855	832	696	762	709	549
Non-science activities.....	489	987	1,030	1,092	1,039	1,144	1,532	1,362

Source: U.S. National Science Foundation, *Federal Support to Universities, Colleges, and Selected Nonprofit Institutions*, annual.

No. 891. EXPENDITURES FOR SCIENTIFIC PURPOSES AT INSTITUTIONS OF HIGHER EDUCATION: 1968 TO 1973

[In millions of dollars. "N.e.c." means not elsewhere classified]

TYPE OF EXPENDITURE	UNIVERSITIES AND COLLEGES				FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS			
	1968	1970	1972	1973	1968	1970	1972	1973
Current research and development expenditures	1,259	1,283	1,326	1,3615	719	737	764	815
Basic research	2,011	2,104	2,510	2,558	276	269	250	286
Applied research	492	520	706	901	231	216	225	222
Development	95	112	111	156	212	253	288	307
Source of funds:								
Federal Government	1,572	1,648	1,888	2,030	715	734	758	811
State and local governments	172	219	266	292	(z)	(z)	1	1
Foundations, vol. health agencies	96	110	129	131	1	(z)	(z)	1
Industry	55	61	75	87	(z)	(z)	(z)	(z)
Own funds and other sources	704	797	1,019	1,074	2	2	4	2
Field of science: ²								
Engineering	367	386	415	470	179	189	198	212
Physical sciences	371	361	389	432	410	428	432	474
Environmental sciences	140	144	218	224	28	27	37	41
Mathematics	87	110	106	116	37	38	42	45
Life sciences	1,207	1,376	1,642	1,777	33	34	36	38
Psychology	79	82	97	102	6	2	1	1
Social sciences ³	252	275	334	361	9	5	9	1
Other sciences, n.e.c.	97	101	126	134	17	14	8	3

Z. Less than \$500,000. ¹ Includes estimates for departmental research.

² Development by field of science collected for first time in 1973; prior years are estimated.

³ Includes anthropology, economics, history, linguistics, political science, sociology, and social sciences, n.e.c.

Source: U.S. National Science Foundation. Data derived from Surveys of Scientific Activities of Institutions of Higher Education.

No. 892. EMPLOYMENT OF NATURAL SCIENTISTS AND ENGINEERS—TOTAL AND IN RESEARCH AND DEVELOPMENT, BY SECTOR: 1950 TO 1970

[In thousands. As of January. Excludes social scientists]

SECTOR	1950	1955	1960	1962	1964	1966	1968	1970
All activities, total	556.7	812.6	1,104.0	1,210.3	1,327.0	1,417.5	1,525.0	1,594.7
Industry	396.3	610.1	812.0	878.3	946.0	1,004.2	1,069.8	1,111.2
Federal Government	59.7	81.5	97.7	110.6	126.4	134.2	145.4	150.4
State and local government	46.8	54.2	70.6	78.0	80.6	84.3	86.5	88.5
Universities and colleges	50.3	61.2	114.8	130.9	158.2	178.1	205.8	228.2
Nonprofit organizations	3.6	5.6	8.7	12.5	15.2	16.7	17.6	16.4
Research and development, total	157.9	248.8	386.1	441.9	497.9	526.3	552.8	535.4
Industry	102.6	180.4	282.1	318.8	351.1	369.9	386.5	372.2
Federal Government	27.4	27.6	44.7	53.1	67.2	72.3	72.4	69.6
State and local government	1.9	2.3	3.4	4.2	4.2	4.5	4.0	4.2
Universities and colleges	22.9	33.8	48.6	55.2	62.5	65.6	75.3	75.7
Nonprofit organizations	3.1	4.7	7.3	10.6	12.9	14.0	14.6	13.7

No. 893. EMPLOYMENT OF NATURAL SCIENTISTS, BY FIELD: 1950 TO 1970

[In thousands]

YEAR	Total	Chemists	Mathematicians	Physicists	Geologists, geophysicists	Other physical scientists	Agricultural scientists	Biological scientists	Medical scientists
1950	148.7	51.9	13.8	14.0	13.0	10.2	16.9	19.9	8.8
1955	211.2	73.9	21.1	19.9	17.1	17.4	22.2	27.3	12.3
1960	302.9	99.7	34.2	29.8	20.4	22.1	30.4	44.8	21.6
1961	318.2	102.8	36.3	31.6	20.6	23.8	32.3	46.0	24.1
1962	337.1	106.8	39.8	33.9	21.1	24.2	35.3	49.0	27.2
1963	358.1	110.0	43.6	36.3	22.5	25.3	38.5	51.3	30.5
1964	381.5	115.0	47.2	39.0	23.4	26.3	41.5	54.4	34.6
1965	396.4	116.7	50.3	39.9	25.5	27.1	44.1	55.6	37.2
1966	417.9	119.6	53.9	42.1	26.2	29.1	46.9	56.0	43.2
1967	439.0	122.8	61.9	44.4	28.4	30.2	46.5	62.6	42.0
1968	452.6	127.3	67.1	46.2	29.0	33.6	47.2	65.8	46.4
1969	482.7	131.0	73.0	48.4	29.4	35.0	47.5	67.7	50.7
1970	496.5	132.9	74.3	49.1	30.6	36.2	49.3	71.1	53.0

Sources of tables 892 and 893: U.S. Bureau of Labor Statistics, *Employment of Scientists and Engineers in the United States, 1950-70*, Bulletin No. 1781.

No. 894. SCIENTISTS, ENGINEERS, AND TECHNICIANS IN PRIVATE INDUSTRY, BY FIELD OF EMPLOYMENT, 1961 TO 1970, AND BY INDUSTRY, 1970

[In thousands. As of January. Excludes psychologists and social scientists]

YEAR AND INDUSTRY	Total	Engi-neers	Math-ematicians	Chem-ists	Phys-i-cists	Earth-scientists	Other physical scientists ¹	Life-scientists	Tech-nicians
1961.....	1,412.4	686.9	19.8	74.7	13.7	13.5	15.9	17.9	570.0
1965.....	1,614.4	789.1	27.1	84.5	16.1	15.1	15.8	20.2	646.5
Total, 1970.....	1,897.5	898.1	38.7	93.5	19.8	16.8	20.2	24.1	786.3
Ordnance and accessories.....	68.9	45.4	3.0	1.2	2.2	.1	.4	.4	16.2
Chemicals and allied prod.....	154.1	46.4	1.9	42.8	2.3	.2	1.7	12.0	46.8
Petroleum refining.....	19.7	9.2	.2	3.2	.2	.3	.1	(Z)	6.5
Primary and fabricated metal products.....	106.4	48.5	.8	3.3	.5	(Z)	6.9	(Z)	46.4
Machinery.....	172.3	85.1	3.8	2.0	1.1	(Z)	1.9	.2	78.2
Communications equip.....	124.8	72.3	2.5	.9	1.8	.1	1.0	.2	46.0
Other electrical equipment.....	147.2	76.7	1.8	2.1	1.7	(Z)	.7	(Z)	64.2
Aircraft and parts.....	125.9	83.8	3.3	1.8	1.5	.1	1.1	.2	34.1
Motor vehicles and equip.....	50.0	30.5	.9	1.1	.4	(Z)	1.0	(Z)	16.1
Instruments, related prod.....	60.9	31.5	.7	3.3	1.3	(Z)	.3	.4	23.4
Other manufacturing.....	125.8	57.2	1.8	15.9	.5	.2	1.7	3.6	44.9
Mining.....	46.0	17.8	.3	1.0	.1	12.9	.4	(Z)	13.5
Contract construction.....	87.6	54.7	.4	.1	(Z)	(Z)	(Z)	(Z)	32.4
Trans., public utilities, and other nonmanufacturing.....	225.0	86.5	10.0	5.2	.4	.4	.6	2.0	119.9
Services.....	382.9	152.5	7.3	9.6	5.8	2.5	2.4	5.1	197.7

Z Less than 50.

¹ Includes metallurgists.

Source: U.S. Bureau of Labor Statistics, *Employment of Scientists and Engineers in the United States, 1960-70*, Bulletin No. 1781. Technician data from Bulletin Nos. 1009, 1674, and 1723, and unpublished data.

No. 895. PROFESSIONAL SCIENTIFIC AND TECHNICAL PERSONNEL IN THE FEDERAL GOVERNMENT, BY OCCUPATIONAL GROUP: 1960 TO 1972

[In thousands, except percent. 1966 data as of December, all other years as of October]

OCCUPATIONAL GROUP	1960	1966	1968	1969	1970	1971	1972	PERCENT FEMALE	
								1971	1972
Total.....	153.4	193.6	207.0	210.3	208.3	213.8	218.3	16.8	17.6
Scientific personnel.....	53.3	72.5	78.1	79.4	79.3	81.1	79.7	7.9	8.2
Physical sciences.....	18.0	27.3	29.5	30.5	29.8	30.4	27.4	6.3	6.3
Mathematics and statistics.....	5.0	7.3	8.9	8.3	8.6	8.8	9.7	16.4	16.3
Biological sciences.....	21.6	26.4	27.1	28.0	28.4	29.2	29.2	4.6	4.7
Social sciences and urban planning.....	4.7	6.3	7.1	7.1	7.1	7.2	7.8	26.1	28.5
Geography and cartography.....	2.3	3.2	3.4	3.4	3.3	3.2	3.0	8.1	7.2
Psychology.....	1.7	1.9	2.0	2.0	2.2	2.4	2.5	13.1	13.6
Engineering personnel.....	61.0	76.8	82.8	84.1	83.0	84.2	87.0	0.5	0.5
Health professional personnel.....	39.1	44.3	46.2	46.8	46.0	48.4	51.7	60.1	60.9
Health officers.....	11.1	13.1	13.6	13.7	13.0	13.3	13.5	5.9	6.0

Source: U.S. National Science Foundation. Compiled from data supplied by Civil Service Commission.

No. 896. SCIENTISTS AND ENGINEERS EMPLOYED (Full-Time Equivalent) IN UNIVERSITIES AND COLLEGES, SELECTED STATES: 1965 TO 1973

STATE	1965, Jan.	1969, Jan.	1971, Jan.	1973		STATE	1965, Jan.	1969, Jan.	1971, Jan.	1973	
				Total	Teach-ing					Total	Teach-ing
				1973	Teach-ing					1973	Teach-ing
U.S.....	178,904	246,183	273,775	282,631	183,068	N.J.....	3,800	5,308	6,047	6,890	4,069
Calif.....	19,534	24,286	27,031	27,762	18,385	N.Y.....	22,487	29,074	33,577	32,499	19,462
Fla.....	3,668	5,372	5,926	6,018	4,450	N.C.....	5,432	6,442	6,823	6,746	4,749
Ga.....	2,990	4,280	5,111	5,305	3,632	Ohio.....	8,595	11,567	12,768	11,402	6,971
Ill.....	8,358	12,142	12,926	14,701	8,706	Pa.....	10,660	16,128	16,914	15,722	10,918
Ind.....	3,790	4,570	5,353	5,475	4,202	Tenn.....	2,988	4,103	4,535	5,053	3,710
Md.....	4,842	6,631	7,227	7,969	4,573	Tex.....	7,699	11,263	12,295	14,453	8,335
Mass.....	8,686	12,742	13,181	14,469	8,727	Va.....	2,813	4,052	4,898	5,535	4,059
Mich.....	7,059	8,379	9,591	11,035	6,981	Wash.....	2,888	3,986	4,977	5,170	3,420
Minn.....	3,444	4,185	4,947	5,247	4,075	Wis.....	3,835	7,065	8,287	7,594	4,587
Mo.....	3,498	5,427	6,456	6,192	3,659	All other.....	41,840	58,631	64,955	67,454	44,548

Source: U.S. National Science Foundation, *Resources for Scientific Activities at Universities and Colleges*.

NO. 897. SCIENTISTS AND ENGINEERS—EMPLOYMENT IN INSTITUTIONS OF HIGHER EDUCATION, BY FIELD OF EMPLOYMENT: 1965 AND 1973

[As of January. Includes full-time and part-time personnel. Excludes graduate students who receive stipends for part-time services as scientists or engineers. R and D=research and development]

FIELD OF EMPLOYMENT	UNIVERSITIES AND COLLEGES		FED. FUNDED R AND D CENTERS		FIELD OF EMPLOYMENT	UNIVERSITIES AND COLLEGES		FED. FUNDED R AND D CENTERS	
	1965	1973	1965	1973		1965	1973	1965	1973
Total ¹	178,904	282,631	11,017	12,273	Mathematicians	13,680	24,858	952	1,158
Engineers ¹	21,681	27,794	4,960	5,083	Life scientists	75,775	112,873	653	527
Aeronautical	1,127	2,236	204	246	Agricultural	13,507	15,158	37	27
Chemical	1,571	1,658	263	273	Biological	24,281	33,828	436	425
Civil	3,145	4,296	180	128	Medical	37,987	63,887	180	75
Electrical	5,478	6,898	2,194	2,647	Psychologists	9,430	18,998	109	109
Mechanical	4,108	5,148	1,311	1,285	Social scientists ¹	32,853	60,952	87	335
Physical scientists ¹	25,485	37,156	4,247	4,461	Economists	7,932	11,563	4	33
Chemists	10,684	15,644	1,254	1,199	Sociologists	6,261	12,619	13	28
Earth scientists	4,005	5,436	152	48	Political scientists	5,919	9,706	13	9
Physicists	9,132	12,207	2,357	2,747	Historians	(NA)	16,400	(NA)	8

NA. Not available.

¹ Includes other engineers or scientists not shown separately.

Source: U.S. National Science Foundation. Data derived from the 1966 and 1973 Surveys of Scientific Activities of Institutions of Higher Education.

NO. 898. SCIENTISTS, 1964 TO 1970, AND BY STATES AND OTHER AREAS, 1970

[For discussion of coverage, see text, p. 530]

YEAR AND STATE OR OTHER AREA	Total	Natural scientists ¹	Social scientists	YEAR AND STATE OR OTHER AREA	Total	Natural scientists ¹	Social scientists
1964	223,854	170,083	53,771	Mississippi	1,367	1,166	201
1966	242,763	186,598	56,165	Missouri	5,748	4,710	1,038
1968	237,942	248,781	49,161	Montana	1,280	1,150	121
1970	312,644	255,609	57,035	Nebraska	1,780	1,422	358
Alabama	2,011	2,232	379	Nevada	741	641	100
Alaska	735	690	45	New Hampshire	1,057	853	204
Arizona	2,692	2,203	439	New Jersey	14,337	12,807	1,530
Arkansas	1,997	802	205	New Mexico	2,718	2,465	233
California	35,219	28,462	6,757	New York	32,391	25,067	7,324
Colorado	5,874	5,037	837	North Carolina	4,912	3,980	923
Connecticut	5,546	4,447	1,099	North Dakota	746	636	110
Delaware	2,928	2,784	144	Ohio	13,404	11,168	2,236
District of Columbia	8,857	5,807	2,960	Oklahoma	3,647	3,260	387
Florida	5,727	4,560	1,161	Oregon	3,674	3,075	599
Georgia	3,960	3,190	770	Pennsylvania	17,094	14,005	3,080
Hawaii	1,289	987	302	Rhode Island	1,365	1,007	268
Idaho	1,318	1,191	127	South Carolina	1,867	1,587	280
Illinois	16,020	12,803	3,217	South Dakota	753	612	141
Indiana	6,641	5,306	1,245	Tennessee	4,310	3,635	675
Iowa	3,364	2,588	776	Texas	15,671	13,749	1,922
Kansas	2,927	2,268	659	Utah	2,271	1,941	330
Kentucky	2,488	1,958	530	Vermont	676	540	136
Louisiana	4,382	3,913	469	Virginia	6,493	5,300	1,193
Maine	935	757	178	Washington	5,728	4,767	961
Maryland	10,725	9,288	1,437	West Virginia	1,823	1,568	255
Massachusetts	12,677	10,329	2,348	Wisconsin	6,005	4,691	1,314
Michigan	10,976	8,553	2,423	Wyoming	888	800	88
Minnesota	5,516	4,411	1,105	Other areas	616	505	111
				Foreign	4,778	3,532	1,246

¹ Beginning 1968, includes computer, space, and marine sciences.

Source: U.S. National Science Foundation, *American Science Manpower, 1970*. Data derived from the National Register of Scientific and Technical Personnel.

Scientists

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No. 899. SCIENTISTS, ENGINEERS, AND PHYSICIANS ADMITTED AS IMMIGRANTS, BY OCCUPATION: 1967 TO 1973

[For years ending June 30. Includes professors and instructors in each field]

OCCUPATION	1967-1973, total							1973
		1967	1968	1969	1970	1971	1972	
Scientists and engineers.....	80,145	12,523	12,973	10,255	13,337	13,102	11,323	6,632
Engineers ¹	55,483	8,821	9,313	7,150	9,305	9,015	7,436	4,443
Aeronautical.....	1,084	369	334	126	105	72	50	28
Chemical.....	5,063	668	602	796	908	860	791	438
Civil.....	8,132	840	1,039	917	1,509	1,666	1,461	700
Electrical.....	8,756	1,344	1,432	1,128	1,464	1,422	1,305	661
Industrial.....	1,995	292	375	248	356	286	304	134
Mechanical.....	9,645	1,344	1,580	1,201	1,618	1,603	1,470	829
Metallurgical and mining.....	1,441	245	228	163	219	236	239	111
Natural scientists ¹	20,650	3,158	3,110	2,601	3,264	3,456	3,271	1,790
Agricultural scientists ²	2,423	189	179	309	380	460	518	388
Biologists and medical scientists.....	2,720	377	328	296	388	495	527	309
Chemists.....	9,339	1,392	1,481	1,282	1,495	1,606	1,372	711
Geologists, geophysicists.....	932	123	174	120	162	134	136	83
Mathematicians, statisticians, etc.....	2,188	396	351	238	348	383	325	147
Physicists.....	2,465	540	494	291	401	296	325	118
Social scientists ¹	4,012	544	550	504	768	631	616	399
Economists.....	2,032	263	265	249	370	347	313	225
Psychologists.....	934	143	159	123	163	133	131	82
Physicians and surgeons.....	32,306	3,325	3,060	2,756	3,155	5,748	7,143	7,119

¹ Includes occupations not shown separately. ² Includes foresters and conservationists.

Source: U.S. National Science Foundation, *Scientists, Engineers, and Physicians from Abroad*, annual. Based on data from U.S. Immigration and Naturalization Service.

No. 900. CHARACTERISTICS OF PERSONS IN ENGINEERING AND SCIENTIFIC OCCUPATIONS IN 1970 CIVILIAN LABOR FORCE, BY RACE: 1972

CHARACTERISTICS	OCCUPATION IN 1970									
	Engineers		Mathema-		Life		Physical		Social	
	Total	Races other than white ¹	Total	Races other than white ¹	Total	Races other than white ¹	Total	Races other than white ¹	Total	Races other than white ¹
Total in 1970...1,000..	1,242.5	37.0	61.7	3.8	83.5	4.6	196.4	11.0	151.3	6.1
PERCENT DISTRIBUTION										
Age, 1972.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under 25 years.....	2.1	3.0	6.3	2.7	4.2	3.0	3.7	1.7	2.2	3.0
25-29 years.....	12.2	16.5	19.4	19.3	15.2	10.5	14.7	17.0	18.2	17.6
30-39 years.....	29.4	40.3	31.1	38.6	31.7	35.1	31.7	43.4	32.3	35.6
40-49 years.....	29.9	28.1	20.6	23.3	24.4	26.8	26.8	25.9	24.6	26.9
50-54 years.....	11.0	5.7	7.6	6.3	9.0	12.4	9.6	5.4	9.1	7.3
55-59 years.....	7.7	3.9	6.4	7.2	6.7	8.6	6.6	3.2	5.9	3.0
60-64 years.....	4.7	1.1	4.5	.9	4.8	5.8	4.6	2.1	4.2	2.2
65 and over.....	3.2	1.4	4.1	1.8	3.0	2.8	2.4	1.2	3.5	3.5
Educational attainment, 1972.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than bachelor's ²	38.3	28.3	28.1	21.8	14.1	19.1	18.9	10.7	12.7	16.1
Bachelor's.....	45.0	41.3	26.4	37.4	30.6	37.4	40.9	26.5	21.3	21.3
Master's.....	18.1	22.8	29.7	34.5	21.0	22.9	18.7	17.5	32.7	39.6
Ph. D.....	2.0	7.2	19.6	17.3	25.7	24.3	24.5	29.7	26.4	20.6
Other degrees ³.....	.6	.5	.8	(2)	1.7	3.1	.4	1.2	1.6	2.1
Field of highest degree, 1972 ⁴	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Engineering.....	76.4	82.5	3.4	1.2	1.5	1.8	1.7	.3	1.2	1.8
Mathematics.....	2.0	1.5	57.7	63.2	4	—	—	—	—	1.5
Life sciences.....	.9	.7	2.1	3.3	76.8	69.1	9.0	16.7	—	.6
Physical sciences.....	4.6	1.9	3.2	2.3	2.2	3.6	68.6	58.1	1.2	53.3
Social sciences.....	2.2	2.7	8.8	11.5	3.2	—	1.4	—	55.7	37.0
Other fields ⁵	13.9	10.7	24.8	18.5	15.8	25.5	10.3	10.1	35.8	37.0

¹ Represents zero. ² Less than .05 percent.

¹ Sample includes relatively small numbers of persons of race other than white. Sampling error is large for races other than white; figures shown should be interpreted with caution. ² Includes statisticians and actuaries.

³ Includes no college, associate degree, and 1 to 4 years of college with no degree. ⁴ Includes first professional,

and registered nurse degrees. ⁵ Excludes persons without 4-year college degree. ⁶ Includes other than science and engineering and no report.

Source: U.S. Bureau of the Census, *Characteristics of Persons in Engineering and Scientific Occupations: 1972* (Technical Paper No. 33).

No. 901. DOCTORAL SCIENTISTS AND ENGINEERS—LABOR FORCE, UNEMPLOYMENT, AND SALARY BY SEX: 1973

[Includes individuals who either received science or engineering doctorates or received doctorates in other fields from 1930 to 1972 and were employed in science and engineering. For definition of median, see preface.]

FIELD OF IDENTIFICATION	Total in labor force ¹	UNEMPLOYED ²		FULL-TIME EMPLOYED		
		Total	Rate ³	Total	Median salary (dollars)	
					Total	Male
Total, all fields.....	229,394	2,643	1.2	213,613	20,890	21,170
Mathematics.....	15,289	185	1.2	14,750	19,790	19,930
Physics/Astronomy.....	17,343	313	1.8	15,832	21,150	21,220
Chemistry.....	28,447	611	2.1	26,157	21,160	21,340
Earth sciences.....	10,342	58	0.5	9,835	20,730	20,840
Engineering.....	34,830	280	0.8	33,745	22,490	22,500
Biosciences.....	57,361	598	1.0	52,323	19,040	20,330
Psychology.....	24,861	263	1.1	22,739	20,010	20,580
Social Sciences.....	26,445	263	1.0	25,025	20,160	20,610
Non-sciences.....	11,002	75	0.7	10,258	22,700	23,220
Unknown.....	3,472	-	-	2,949	22,220	22,300
						18,060

¹ Represents zero. ² Includes full-time and part-time employed, postdoctoral appointees, and those seeking employment. ³ Includes only those seeking employment.

³ Percent of labor force.

Source: U.S. National Science Foundation. Data from National Research Council, *Doctoral Scientists and Engineers in the United States: 1973 Profile*.

No. 902. MEAN ANNUAL SALARIES OF FEDERAL SCIENTIFIC AND HEALTH PERSONNEL, BY OCCUPATIONAL FIELD, BY SEX: 1972

[In dollars. As of October]

OCCUPATIONAL FIELD	Total	Male	Female	OCCUPATIONAL FIELD	Total	Male	Female
Scientific personnel, total.....	18,159	18,380	15,695	Mathematics and statistics.....	10,131	19,696	16,229
Physical sciences.....	19,684	19,991	15,117	Mathematics.....	17,553	17,987	15,738
General physical.....	23,924	24,072	17,997	Statistics.....	18,928	19,564	16,507
Chemistry.....	17,616	18,166	14,471	Social sciences.....	19,844	20,412	16,954
Physics.....	20,224	20,296	17,210	General.....	18,959	19,703	17,028
Biological sciences.....	16,058	16,141	14,390	Economics.....	20,178	20,595	17,044
General biological.....	17,995	18,662	14,081	History.....	18,671	19,272	15,527
Agricultural sciences.....	14,920	14,912	17,118	Geography and cartography.....	15,884	16,014	14,208
Animal sciences.....	19,171	19,346	16,371	Psychology.....	19,789	20,155	17,450
Microbiology.....	17,050	18,132	14,536	Health personnel, total.....	15,418	19,760	12,559
Plant sciences.....	16,597	16,675	14,462	Health officers.....	22,857	22,616	26,642
				Nursing personnel.....	12,040	12,845	12,021

Source: U.S. National Science Foundation, *Science Resources Studies Highlights* (NSF 74-301) and unpublished data. Compiled from data supplied by Civil Service Commission.

No. 903. DOCTORATES CONFERRED—SELECTED FIELDS, BY CHARACTERISTICS: 1973

ITEM	All fields, total ¹	Physical sciences ²	Engi- neering	Life sciences ³	Psy- chology	Social sciences ⁴
Doctorates conferred.....	33,727	5,238	3,338	5,068	2,444	2,850
Percent.....	100.0	100.0	100.0	100.0	100.0	100.0
Male.....	82.0	92.8	98.7	82.8	70.7	84.5
Female.....	18.0	7.2	1.3	17.2	29.3	15.5
White.....	88.5	85.3	77.8	85.3	95.4	80.3
Nonwhite.....	11.5	14.7	22.2	14.7	4.6	10.7
U.S. citizens.....	82.6	77.1	63.7	78.1	93.0	70.2
Foreign citizens.....	15.3	21.2	34.9	20.1	5.3	18.5
Citizenship unknown.....	2.1	1.7	1.4	1.8	1.7	2.3
Median age at award.....years	31.3	29.1	30.4	30.1	29.4	31.1
Percent with master's degree.....	81.4	60.9	91.3	68.2	76.3	81.5
Median time from baccalaureate to doctorate:						
Total time.....years	8.4	6.7	7.7	7.2	6.7	8.2
Registered time.....years	5.8	5.7	5.6	5.6	5.4	5.9

¹ Includes arts and humanities, not shown separately.

² Includes astronomy, physics, chemistry, earth sciences, and mathematics.

³ Includes agriculture, forestry, health sciences, and biological sciences.

⁴ Includes anthropology, archaeology, sociology, economics, political science, and international relations.

Source: U.S. National Science Foundation. Data from National Research Council, *Summary Report, 1973 Doctorate Recipients from United States Universities*.

No. 904. SCIENCE DOCTORATES CONFERRED AND ENROLLMENT FOR ADVANCED DEGREES: 1960 TO 1973

[Doctorates conferred, years ending June 30; enrollment, as of fall term]

FIELD OF SCIENCE	1960	1965	1969	1970	1971	1972	1973
Science doctorates conferred	6,276	10,528	15,993	17,822	19,005	19,035	18,938
Life sciences ¹	1,730	2,679	4,116	4,564	5,051	4,984	5,068
Agricultural and related	343	480	707	809	961	924	929
Health sciences	69	145	253	300	349	318	335
Anatomy, cytology, embryology	33	139	206	221	241	230	194
Physiology and related fields	217	403	579	626	601	690	687
Botany and phyt病理学	188	240	295	281	309	287	312
Biochemistry	259	391	547	580	653	580	636
Microbiology	184	273	380	399	407	395	380
Zoology and entomology	270	360	457	519	572	551	513
Psychology	773	955	1,728	1,883	2,116	2,262	2,444
Physical sciences	1,861	2,859	3,901	4,389	4,494	4,226	4,016
Physics and astronomy	531	1,046	1,452	1,057	1,740	1,635	1,590
Chemistry	1,077	1,439	1,947	2,223	2,204	2,011	1,849
Earth sciences	253	374	502	509	550	580	577
Engineering	792	2,068	3,234	3,432	3,495	3,475	3,338
Mathematics	201	684	1,063	1,218	1,236	1,281	1,222
Social sciences, selected	829	1,283	1,951	2,336	2,613	2,807	2,550
Sociology	162	289	402	506	583	638	599
Economics	352	561	799	971	951	980	1,000
Pol. science, pub. admin., int'l rel.	238	391	559	634	821	911	906
Anthropology and archeology	77	92	191	225	258	278	245
Graduate enrollment, all fields	314,349	535,332	756,865	816,207	836,294		
Science fields	120,638	195,346	243,715	252,159	246,100		
Agriculture and forestry	4,412	6,426	8,186	8,651	9,200		
Biological sciences, incl. general programs	15,303	28,328	36,017	37,609	38,462		
Mathematical subjects ²	11,770	21,014	29,175	30,608	28,847		
Physical sciences	25,707	36,506	39,885	40,113	38,928		
Engineering	36,636	57,516	65,048	64,788	59,321		
Psychology	10,677	15,551	22,726	25,340	26,712		
Social sciences	16,133	30,010	42,678	45,048	44,630		
Health fields	5,842	8,909	12,564	14,242	20,508		
All other fields	187,809	331,077	500,586	549,806	569,598		

NA Not available. ¹ Includes fields not shown separately. ² Beginning 1965, includes computer science.

Source: U.S. National Science Foundation, Data from National Research Council, Doctorate Record File; and U.S. Office of Education, *Enrollment for Masters and Higher Degrees*, annual.

No. 905. PATENTS AND TRADEMARKS: 1951 TO 1973

[Covers patents issued to citizens of United States and residents of foreign countries. For information on copyrights, see table 846. See also *Historical Statistics, Colonial Times to 1957*, series W 66-75 and W 77-78]

ITEM	1951-55	1956-60	1961-65	1966-70	1960	1965	1970	1972	1973
Patent applications filed	379,053	410,389	463,193	504,613	84,475	100,421	109,359	105,300	109,622
Inventions	351,649	384,732	436,082	476,239	79,500	94,632	102,888	98,928	103,695
Designs	25,951	23,865	26,260	4,525	5,413	5,996	5,867	5,425	
Botanical plants	467	584	628	584	131	105	188	135	118
Reissues	986	1,158	1,232	1,530	220	271	307	370	384
Patents issued	208,964	251,872	275,443	342,889	49,986	66,647	67,962	78,183	78,618
For country residents	23,352	36,513	49,325	77,886	7,850	12,782	17,872	23,815	23,344
Inventions	192,651	237,469	260,971	325,144	47,170	62,857	64,427	74,808	74,139
For country residents	(NA)	(NA)	48,322	75,986	7,698	12,525	17,354	28,203	22,638
Individuals	78,450	76,580	69,945	73,503	13,069	16,063	13,511	17,860	17,198
Corporations: U.S.	100,278	133,948	152,537	190,616	28,187	37,158	36,896	38,890	38,615
Foreign ¹	10,537	21,043	30,992	52,771	4,670	8,096	12,204	16,414	16,513
U.S. Government	3,359	5,889	6,497	8,254	1,244	1,540	1,726	1,644	1,813
Designs	15,084	13,024	13,862	16,254	2,543	3,424	3,214	2,901	4,683
For country residents	(NA)	(NA)	920	1,843	188	248	506	490	683
Botanical plants	441	567	576	426	116	120	52	199	132
For country residents	(NA)	(NA)	74	57	14	14	12	32	23
Reissues	788	812	1,034	1,065	157	246	269	275	314
Published applications ²	-	-	-	586	-	-	215	201	143
Certificates of trademarks issued	100,942	108,246	106,635	128,465	22,367	21,666	27,521	28,889	31,509
Trademarks	83,311	90,727	91,046	104,181	18,434	18,501	21,745	23,252	26,112
Trademark renewals	17,631	17,519	14,689	24,284	3,983	3,165	6,076	5,637	5,397

¹ Represents zero. NA Not available. ² Includes patents assigned to foreign governments.

² Abstracts of the technical disclosure of patent applications published at request of applicant or owner. The current practice, called "Defensive Publications," began in November 1968.

Source: U.S. Patent Office, unpublished data. Fiscal-year figures are published in the *Annual Report of the Commissioner of Patents*.

No. 906. FEDERAL SPACE PROGRAM—OUTLAYS, BY AGENCY: 1960 TO 1974

[In millions of dollars. For years ending June 30]

YEAR	Total ¹	NASA ²	Dept. of Defense	Atomic Energy Com- mission	YEAR	Total ¹	NASA ²	Dept. of Defense	Atomic Energy Com- mission
1960	888	329	518	41	1968	6,647	4,575	1,890	146
1961	1,468	694	710	64	1969	6,331	4,083	2,095	117
1962	2,387	1,226	1,029	130	1970	5,453	3,565	1,756	103
1963	4,079	2,517	1,368	181	1971	4,999	3,171	1,693	97
1964	5,900	4,101	1,564	220	1972	4,772	3,195	1,470	60
1965	6,856	5,005	1,592	232	1973	4,719	3,069	1,557	51
1966	7,689	5,828	1,637	188	1974 est.	4,695	2,889	1,688	40
1967	7,208	5,307	1,673	184					

¹ Includes agencies not shown separately.² National Aeronautics and Space Administration. Excludes amounts for aircraft technology.Source: 1960-1965, Report to the Congress from the President of the United States, *United States Aeronautics and Space Activities, 1966*; thereafter, U.S. Office of Management and Budget, *The Budget of the United States Government*, annual.

No. 907. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION—OUTLAYS FOR RESEARCH AND DEVELOPMENT: 1961 TO 1974

[In millions of dollars. For years ending June 30]

PROGRAM	1961	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974 (est.)
Performance, total ¹	438	4,562	5,361	5,137	4,599	4,187	3,699	3,338	3,373	3,271	3,104
Manned space flight	232	3,138	3,819	3,477	3,028	2,754	2,195	1,877	1,727	1,532	1,446
Space science and applications	15	725	755	782	692	563	648	657	884	1,053	940
Space technology	123	401	365	378	369	380	315	270	227	166	141
Aircraft technology	36	88	101	116	145	162	183	206	221	235	270
Supporting operations	33	210	321	384	365	378	358	320	314	284	298
Facilities, total	90	531	572	280	127	65	54	44	50	45	75
Manned space flight	6	401	391	172	69	27	14	8	13	5	33
Space science and applications	1	25	23	14	8	7	8	4	6	11	8
Space technology	19	53	40	33	21	14	13	2	1	(z)	9
Aircraft technology	15	(z)	4	2	4	7	5	4	6	7	9
Supporting operations	50	52	114	68	25	10	14	26	24	22	24

¹ Less than \$500,000.¹ Includes research and development, and research and program management.Source: U.S. Office of Management and Budget, *The Budget of the United States Government*, annual.

No. 908. SPACECRAFT LAUNCHINGS: 1957 TO 1973

[Criterion of success is attainment of earth orbit or earth escape, respectively]

YEAR	UNITED STATES				U.S.S.R. successful launchings	YEAR	UNITED STATES				U.S.S.R. successful launchings			
	Earth orbit		Earth escape				Earth orbit		Earth escape					
	Success	Failure	Success	Failure			Success	Failure	Success	Failure				
Total	734	105	49	13	789	1965	94	8	3	-	73			
1957	-	1	-	-	2	1966	95	12	5	1	51			
1958	5	8	-	4	1	1967	77	4	10	-	67			
1959	9	9	1	2	3	1968	61	3	3	-	74			
1960	16	12	1	2	3	1969	50	1	8	-	70			
1961	35	12	-	12	3	1970	29	1	1	-	81			
1962	54	12	4	1	7	1971	26	2	3	1	84			
1963	60	11	-	-	21	1972	32	-	3	-	89			
1964	69	8	4	-	18	1973	22	1	3	-	107			

- Represents zero.

¹ Attained earth orbit and included in earth orbit success totals.Source: Report to the Congress from the President of the United States, *U.S. Aeronautical and Space Activities*, annual.

Manned Space Flights

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No. 909. ORBITAL MANNED SPACECRAFT: 1961 THROUGH DECEMBER 1973

COUNTRY, VEHICLE, AND ASTRONAUT	Launch- ing date	PAYLOAD		EARTH ORBITS			Life- time (hr.: min.)
		Dimensions ¹ (ft.)	Liftoff weight (lb.)	Perigee (statute miles)	Apogee (statute miles)	Revolu- tions ²	
UNITED STATES							
Mercury Atlas:							
6.....Glenn	2-20-62	4 26H-8D	4,265	100	162.2	3	4:55
5.....Carpenter	5-24-62	4 26H-6D	4,244	99.9	166.8	3	4:56
8.....Schirra	10-3-62	4 26H-6D	4,325	100	175.8	6	9:13
9.....Cooper	5-15-63	4 26H-6D	4,000	100.3	165.9	22	34:19
Gemini:							
3.....Grissom and Young	3-23-65	19H-10D	7,136	100	139	3	4:52
4.....McDivitt and White	6-3-65	19H-10D	7,879	100	184	62	97:56
5.....Cooper and Conrad	8-21-65	19H-10D	7,879	100	207	120	190:55
6.....Schirra and Stafford	12-15-65	19H-10D	7,817	100	193	16	25:51
7.....Borman and Lovell	12-4-66	19H-10D	8,076	100	204	206	330:35
8.....Armstrong and Scott	3-10-66	19H-10D	8,351	99	186	6,6	10:41
9.....Cernan and Stafford	6-3-66	19H-10D	8,100	100	194	45	72:21
10.....Young and Collins	7-18-66	19H-10D	8,295	100	476	43	70:46
11.....Conrad and Gordon	9-12-66	19H-10D	8,374	99	853	44	71:17
12.....Lovell and Aldrin	11-11-66	19H-10D	8,296	100	187	50	94:34
Apollo:							
7.....Schirra, Eisele, and Cunningham	10-11-68	82H-21.7D	36,419	104	282	163	260:08
8.....Borman, Lovell, and Anders	12-21-68	82H-21.7D	87,382	119	119	6 ²	147:00
9.....McDivitt, Scott, and Schweickart	3-3-69	82H-21.7D	95,231	112	312	151	241:00
10.....Stafford, Young, and Cernan	5-18-69	82H-21.7D	98,273	115	118	9 ²	192:03
11.....Armstrong, Collins, and Aldrin	7-16-69	82H-21.7D	100,756	118	118	19 ²	195:18
12.....Conrad, Gordon, and Bean	11-14-69	82H-21.7D	101,127	115	118	11 ²	244:36
13.....Lovell, Swigert, and Haise	4-11-70	82H-21.7D	101,261	115	115	12 ²	142:55
14.....Shepard, Mitchell, and Roosa	1-31-71	82H-21.7D	102,084	113.7	117.3	12 ²	216:20
15.....Scott, Worden, and Irwin	7-26-71	82H-21.7D	107,142	105	106	14 ²	298:11
16.....Young, Mattingly, and Duke	4-16-72	82H-21.7D	107,158	104	109	13 ²	265:61
17.....Cernan, Evans, and Schmitt	12-7-72	82H-21.7D	107,193	106	105	14 ²	292:32
Skylab:							
SL-2.....Conrad, Kirwin, Weitz	5-25-73	35H-13D	30,800	270	270	404	672:49
SL-3.....Bean, Garriott, Lousma	7-28-73	35H-13D	30,800	270	270	858	1,427:09
SL-4.....Carr, Gibson, Pogue	11-16-73	35H-13D	30,800	270	270	1,214	2,016:16
U.S.S.R.							
Vostok (East):							
I.....Gagarin	4-12-61	20H	10,418	108.8	187.7	1	1:48
II.....Titov	8-6-61	20H-12-14D	10,430	110.3	115.3	17.5	25:18
III.....Nikolayev	8-11-62	(NA)	10,400	107.4	137.2	64+	94:35
IV.....Popovich	8-12-62	(NA)	10,400	111	158	48+	70:57
V.....Bykovsky	6-14-63	(NA)	10,360	99	120	81	119:06
VI.....Tereshkova	6-16-63	(NA)	10,360	108	135	48	70:50
Voskhod (Sunrise):							
I.....Komarov, Yegorov, and Feoktistov	10-12-64	(NA)	16,000	111	254	16	24:17
II.....Belyayev and Leonov	3-18-65	(NA)	107.2	306.9	17	27:02	
Soyuz (Union):							
I.....Komarov ¹⁸	4-23-67	(NA)	(NA)	122.6	137.9	18	26:45
III.....Beregovoy	10-26-68	(NA)	(NA)	(NA)	(NA)	61	94:51
IV.....Shatilov	1-14-69	(NA)	(NA)	(NA)	(NA)	48	71:14
V.....Volynov, Yeliseyev, and Krunov	1-15-69	(NA)	(NA)	(NA)	(NA)	49	72:46
VI.....Shonin, Kubasov	10-11-69	(NA)	14,500	(NA)	(NA)	75	118:21
VII.....Filipchenko, Volkov, Gorbazko	10-12-69	(NA)	14,500	(NA)	(NA)	75	118:43
VIII.....Shatilov, Yeliseyev	10-13-69	(NA)	14,500	(NA)	(NA)	75	118:51
IX.....Nikolayev, Sevastianov	6-7-70	37.9H-11, 2D	14,500	(NA)	(NA)	286	424:59
X.....Shatilov, Yeliseyev, Rukavishnikov	4-22-71	37.9H-11, 2D	14,500	129.3	152.0	32	47:46
XI.....Deobrovolsky, Volkov, Patseyev ¹⁹	6-6-71	31H-10D	14,500	142.4	147.7	361	570:23
XII.....Lazarev and Makarov	9-27-73	(NA)	(NA)	(NA)	(NA)	(NA)	47:16
XIII.....Klimuk and Lebedev	12-18-73	(NA)	(NA)	(NA)	(NA)	(NA)	188:55

NA Not available. ¹H=height; D=diameter. ²A revolution is the distance a spacecraft must travel to return to a specified line of earth longitude. ³Vehicle lift-off weight, 260,000 lb.; dimensions, 93H-16D.

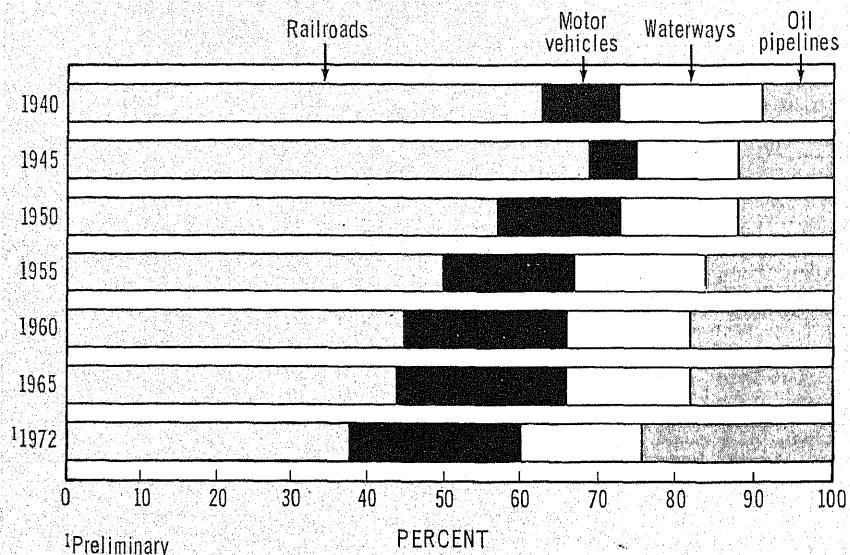
* Dimensions and weight cover Apollo spacecraft command service and lunar modules including escape tower.

⁵ Recovery weight (in lb.): 2,400, 2,480, 2,440, and 2,480, respectively. ⁶ Vehicle lift-off weight, 340,000 lb.; maximum dimensions, 109H-10D; payload recovery weight, 4,700 lb. ⁷ Vertical lift-off weight, 6,500,000 lb.; maximum dimensions, 363H-33D; payload recovery weight, 11,700 lb. ⁸ 2 earth and 10 lunar orbits, 70 statute miles above the moon. ⁹ 2 earth orbits plus 30.8 lunar orbits by the command and lunar excursion modules; time in lunar orbit, 61 hours, 41 minutes. ¹⁰ Two earth revolutions and 30 lunar excursions at 70 miles; first manned lunar landing; 47.6 lb. of rocks returned; astronauts on lunar surface 21 hrs. 36 min. ¹¹ Two earth revolutions and 44.5 lunar revolutions at 70 miles; second manned lunar landing; about 75 lb. of rocks returned; astronauts on surface 31.5 hours. ¹² Two earth orbits; spacemen made one pass around moon and returned to earth. ¹³ Two earth revolutions and 34 moon revolutions; 33½ hours on surface of moon. ¹⁴ Two earth orbits and 74 lunar revolutions; 66 hours and 55 minutes on lunar surface. ¹⁵ Two earth revolutions and 65 lunar revolutions; astronauts on surface for 71 hours and 12 minutes. ¹⁶ Two and one-third earth revolutions and 75 moon revolutions; astronauts on surface for 75 hours. ¹⁷ All Skylab crews docked the Apollo spacecraft with the 187,000 lb. space station in Earth orbit. ¹⁸ Cosmonaut killed when spacecraft crashed when landing. ¹⁹ Cosmonauts killed during Soyuz XI reentry.

Source: U.S. National Aeronautics and Space Administration, *Space Activities Summary*, various dates. (For U.S.S.R., based on unofficial data from U.S. and Soviet press and radio.)

FIG. XXXVII. PERCENT DISTRIBUTION OF TON-MILES OF DOMESTIC INTERCITY FREIGHT TRAFFIC, BY TYPE OF TRANSPORTATION: 1940 TO 1972

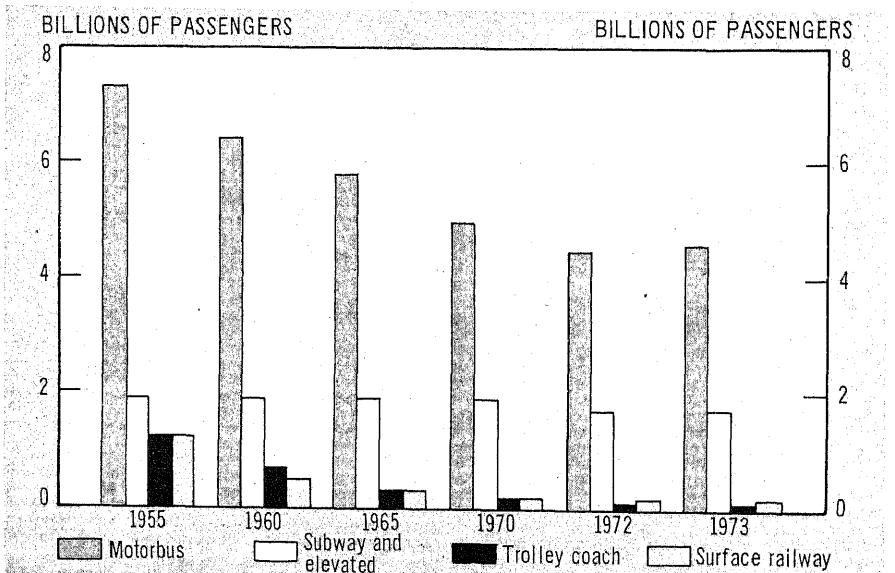
[Airways not shown separately—less than 1 percent. See table 911]



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Interstate Commerce Commission.

FIG. XXXVIII. PASSENGERS CARRIED BY PUBLIC TRANSPORTATION: 1955 TO 1973

[See table 949]



Source: Chart prepared by U.S. Bureau of the Census. Data from American Transit Association, Washington D.C.

Section 21

Transportation—Land

This section presents statistics relating to the mileage, control, and financing of public roads and to the transportation of persons and goods by land. The modes of transport included are passenger car, truck, railroad, bus and streetcar, and pipeline.

The principal compiler of data on public roads and on ownership and operation of motor vehicles is the Department of Transportation's Federal Highway Administration. The annual *Highway Statistics* and the historical *Highway Statistics, Summary to 1965*, are publications of the Federal Highway Administration; *Accidents of Large Motor Carriers of Property* and *Accidents of Class I Motor Carriers of Passengers*, which present data on accidents involving intercity trucks and buses, respectively, are annual publications of the Bureau of Motor Carrier Safety. The department's Federal Railroad Administration presents data on accidents involving railroads in its annual *Accident Bulletin*.

Another major source of data on land transport is the Interstate Commerce Commission. Among its publications are the monthly *Transport Economics* and the *Annual Report*, containing operating data on all types of domestic transport, and the annual *Transport Statistics in the United States*, which is issued in separate parts. Part 1 is devoted to railroads, part 6 to oil pipelines, and part 7 to motor carriers. *Statistics of Railways in the United States*, published annually from 1887 through 1953, is a source of historical data.

Various censuses conducted by the Bureau of the Census also provide data relating to transportation. Data from the 1963, 1967, and 1972 censuses of transportation are presented in *Commodity Transportation Survey* (1972 report in process), *National Travel Survey*, and *Truck Inventory and Use Survey*. The *Annual Survey of Manufactures* and reports of the Census of Manufactures and the Census of Business contain statistics on the motor-vehicle and equipment industry and on retail, wholesale, and services aspects of this industry. Additional data from those reports are included in sections 28 and 29. Data on persons commuting to work are contained in the *Census of Population* subject report *Journey to Work*.

Nongovernmental data can be found in the weekly and annual *Cars of Revenue Freight Loaded* and the annual *Yearbook of Railroad Facts*, both published by the Association of American Railroads, Washington, D.C.; *Bus Facts*, issued annually by the National Association of Motor Bus Owners, Washington, D.C.; the *Transit Fact Book*, containing street railway and motorbus statistics, published annually by the American Transit Association, Washington, D.C.; and *Transportation Facts and Trends*, issued by the Transportation Association of America, Washington, D.C. Useful annual handbooks in the field of motor-vehicle transport are *Automobile Facts and Figures* and *Motor Truck Facts*, both issued by the Motor Vehicle Manufacturers Association of the U.S., Detroit; *American Trucking Trends*, issued by the American Trucking Association, Washington, D.C. and *Accident Facts*, issued by the National Safety Council, Chicago.

Highway systems.—The Federal-Aid Highway Act of 1916 provides for the sharing of highway construction costs between the States and the Federal Government with the initiative retained by each State for choosing projects and carrying them out. The planning and development of Federal-aid systems began in 1921. Federal funds share with State funds in costs of engineering, construction, and right-of-way acquisition on the designated systems while other charges, such as maintenance and policing, are borne entirely by the States and local agencies.

The Federal-aid primary system connects all of the principal cities, county seats, ports, manufacturing areas, and other traffic generating areas. In general, these are the same as the State trunklines. The Federal-aid secondary system consists of important feeder roads linking the farms, factories, distribution outlets, and smaller communities with the primary system.

Motor carriers.—Prior to 1950, class I for-hire motor carriers were classified by the Interstate Commerce Commission as those with \$100,000 or more of gross annual operating revenue. For 1950–1958, class I carriers classified as having gross operating revenue of \$200,000 for 3-year period. Beginning 1969, class I carriers classified as having gross operating revenue of \$1,000,000 for 3-year period.

Railroads.—The total railroad mileage of the United States comprises companies reporting to the Interstate Commerce Commission, grouped as follows: (1) Regular line-haul (intercity) railroads (and their nonoperating subsidiaries); (2) switching and terminal railroads; (3) private railroads prior to 1964 (identified by the Commission as "circular" because they reported on brief circulars); and (4) unofficial railroads, so designated when their reports are received too late for tabulation. For the most part, circular, unofficial, and switching and terminal railroads, are not included in the statistics.

Nonoperating subsidiaries comprise proprietary companies, which are covered by the reports of operating carriers, and lessor companies, which have no traffic and whose reports appear only in statistics of capitalization, dividends, and investment.

Operating railroads are classified on the basis of operating revenues. Prior to 1956, the classification was as follows: Class I, those having more than \$1,000,000 gross annual operating revenue; class II, from \$100,000 to \$1,000,000; and class III, less than \$100,000. From 1956 to 1964, the following classification was in effect: Class I, \$3,000,000 or more; and class II, under \$3,000,000. Effective January 1965, the classification was changed to the following: Class I, \$5,000,000 or more; and class II, under \$5,000,000.

Historical statistics.—Tabular headnotes provide cross-references, where applicable, to *Historical Statistics of the United States, Colonial Times to 1957*. See preface.

No. 910. OPERATING REVENUES, BY TYPE OF TRANSPORT: 1940 TO 1973

[Excludes Alaska and Hawaii, except as noted]

TRANSPORT AGENCY	1940	1945	1950	1955	1960	1965	1970	1972	1973
REVENUES (mil. dol.)									
Electric railways	53	87	79	60	23	13	11	11	12
Railway Express ¹	120	284	223	241	248	316	313	263	240
Railroads ²	4,519	9,284	9,924	10,590	9,955	10,738	12,511	13,321	14,100
Waterlines ⁴	113	173	330	452	427	426	502	525	545
Pipelines (oil) ⁵	236	304	442	678	770	904	1,188	1,249	1,338
Domestic scheduled air carriers ⁶	77	215	558	1,215	2,129	3,609	7,131	8,588	(N/A)
Motor carriers of property ³	898	1,840	3,737	5,535	7,214	10,068	14,535	16,700	18,700
Motor carriers of passengers	176	652	539	552	667	885	7,882	1,091	1,072
INDEX (1967=100)									
Railroads ²	42	85	91	97	92	99	115	123	130
Pipelines (oil)	23	31	44	68	77	91	119	126	134
Domestic scheduled air carriers ⁶	2	4	11	25	44	74	148	176	(N/A)
Motor carriers of property ³	8	16	33	49	64	89	127	148	165
Motor carriers of passengers	19	69	57	58	71	94	110	115	113

¹ NA Not available. ² Through 1969, data are after deducting payments to others for express privileges. ³ Beginning 1960, includes Alaska and Hawaii. ⁴ Includes only revenues from domestic traffic of carriers under jurisdiction of Interstate Commerce Commission. ⁵ Beginning 1960, includes one pipeline operating in Alaska. ⁶ Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*. Beginning 1955, includes Alaska and Hawaii. Revenues for scheduled passenger cargo operations. ⁷ Excludes Class II and III passenger carriers.

Source: Except as noted, U.S. Interstate Commerce Commission, *Annual Report, Statistics of Class I, II, and III Motor Carriers, 1899–1958* (Statement No. 589); *Transport Economics*, monthly; and unpublished data.

No. 911. VOLUME OF DOMESTIC INTERCITY FREIGHT TRAFFIC, BY TYPE OF TRANSPORT: 1940 TO 1972

In billions of ton-miles, except percent. Motor vehicles and airways, prior to 1950, and other types of transportation, prior to 1960, exclude Alaska and Hawaii, except as noted. A ton-mile is the movement of 1 ton (2,000 pounds) of freight for the distance of 1 mile. Comprises public and private traffic, both revenue and nonrevenue. See also *Historical Statistics, Colonial Times to 1957*, series Q 1-11]

YEAR	Total traffic, volume	RAILROADS ¹		MOTOR VEHICLES		INLAND WATERWAYS ²		OIL PIPELINES		AIRWAYS ³	
		Volume	Percent of total	Volume	Percent of total	Volume	Percent of total	Volume	Percent of total	Volume	Percent of total
1940	651	412	63.24	62	9.53	118	18.13	59	9.10	(Z)	0.002
1945	1,072	736	68.64	67	6.24	143	13.31	127	11.80	0.1	0.008
1950	1,094	628	57.44	173	15.80	163	14.93	129	11.81	0.3	0.029
1955	1,298	655	50.43	223	17.20	217	16.68	203	15.66	0.6	0.037
1958	1,231	575	46.68	256	20.76	189	15.35	211	17.16	0.6	0.047
1959	1,303	599	46.01	270	21.41	197	15.09	227	17.43	0.7	0.057
1960	1,330	595	44.73	255	21.46	220	16.56	229	17.19	0.8	0.058
1961	1,326	586	44.17	206	22.36	210	15.82	233	17.59	0.9	0.068
1962	1,387	616	44.38	309	22.30	223	16.08	238	17.14	1.3	0.093
1963	1,409	644	43.82	336	22.89	234	15.94	253	17.26	1.3	0.088
1964	1,556	679	43.65	356	22.90	250	16.08	269	17.27	1.5	0.096
1965	1,651	721	43.67	359	21.76	262	15.89	306	18.56	1.9	0.116
1966	1,759	702	43.33	381	21.66	281	15.95	333	18.03	2.3	0.128
1967	1,776	742	41.79	389	21.88	281	15.85	361	20.33	2.6	0.145
1968	1,839	757	41.16	396	21.55	291	15.85	391	21.28	2.9	0.157
1969	1,895	774	40.84	404	21.32	303	15.98	411	21.69	3.2	0.168
1970	1,936	771	39.83	412	21.28	319	16.46	431	22.26	3.3	0.170
1971	1,953	746	38.19	445	22.78	315	16.13	444	22.73	3.5	0.170
1972 (prel.)	2,077	784	37.77	470	22.63	339	16.31	480	23.11	3.7	0.180

Z. Less than 50 million ton-miles.

¹ Includes electric railways, express, and mail.

² Includes Great Lakes. Includes Alaska for all years and Hawaii beginning 1959.

³ Domestic revenue service only. Includes express, mail, and excess baggage.

Source: U.S. Interstate Commerce Commission, *Annual Report*; Statement No. 6103, *InterCity Ton-Miles, 1939-1969*; and *Transport Economics*, monthly.

No. 912. VOLUME OF DOMESTIC INTERCITY PASSENGER TRAFFIC, BY TYPE OF TRANSPORT: 1950 TO 1972

In billions of passenger-miles, except percent. Airways, prior to 1950, and other types of transportation, prior to 1960, exclude Alaska and Hawaii. A passenger-mile is the movement of 1 passenger for the distance of 1 mile. Comprises public and private traffic, both revenue and nonrevenue.

YEAR	Total traffic, volume	PRIVATE AUTOMOBILES		AIRWAYS ¹		BUS (excludes schoolbus)		RAILROADS ²		INLAND WATERWAYS ³	
		Volume	Percent of total	Volume	Percent of total	Volume	Percent of total	Volume	Percent of total	Volume	Percent of total
1950	508	438	86.20	10	1.98	26	5.20	32	6.30	1.2	0.23
1955	716	637	89.01	23	3.18	25	3.56	29	4.01	1.7	0.24
1958	760	635	90.14	29	3.75	21	2.73	24	3.11	2.1	0.27
1959	765	687	89.80	33	4.26	20	2.66	22	2.03	2.0	0.26
1960	784	706	90.10	34	4.33	19	2.47	22	2.75	2.7	0.34
1961	701	714	90.18	35	4.37	20	2.56	21	2.59	2.3	0.30
1962	818	736	89.95	37	4.58	22	2.66	20	2.47	2.7	0.33
1963	853	766	89.83	43	5.02	23	2.64	19	2.19	2.8	0.32
1964	896	802	89.53	49	5.49	23	2.61	18	2.05	2.8	0.32
1965	920	818	88.86	58	6.31	24	2.58	18	1.91	3.1	0.34
1966	971	856	88.10	69	7.14	25	2.53	17	1.78	3.4	0.35
1967	1,021	890	87.18	87	8.55	25	2.44	15	1.50	3.4	0.33
1968	1,070	936	86.80	101	9.38	25	2.27	13	1.23	3.4	0.32
1969	1,138	977	85.86	120	10.54	25	2.19	12	1.08	3.8	0.33
1970	1,185	1,026	86.60	119	10.01	25	2.14	11	0.92	4.0	0.34
1971	1,230	1,071	87.11	120	9.76	26	2.07	9	0.73	4.1	0.33
1972 (prel.)	1,300	1,120	86.82	123	10.24	26	1.07	9	0.66	4.0	0.31

¹ Includes domestic commercial revenue service and private pleasure and business flying.

² Includes electric railways.

³ Includes Great Lakes.

Source: U.S. Interstate Commerce Commission, *Annual Report*, and *Transport Economics*, monthly.

Transportation—Land

No. 913. EMPLOYMENT IN TRANSPORTATION, BY TYPE OF TRANSPORT: 1960 TO 1973

[Annual averages]

TYPE OF TRANSPORT	NUMBER (1,000)					PERCENT				
	1960	1965	1970	1972	1973	1960	1965	1970	1972	1973
Total.....	2,550	2,532	2,681	2,631	2,688	100.0	100.0	100.0	100.0	100.0
Railroad.....	885	735	627	575	560	34.7	29.0	23.4	21.9	20.8
Local and interurban passenger.....	284	269	279	268	269	11.2	10.6	10.4	10.2	10.0
Trucking and warehousing.....	856	964	1,083	1,102	1,161	33.6	38.1	40.4	41.9	43.2
Air.....	191	229	351	345	361	7.5	9.0	13.1	13.1	13.4
Pipeline.....	28	20	18	18	18	0.9	0.8	0.7	0.7	0.7
Water.....	230	215	217	210	210	9.1	8.0	8.2	7.8	7.8
Other.....	310	{ 85	108	100	109	12.2	{ 3.4	4.0	4.0	4.1

Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, monthly.

No. 914. LARGEST TRANSPORTATION COMPANIES—REVENUES AND ASSETS, BY RANK OF OPERATING REVENUES: 1960 TO 1973

[In billions of dollars, except percent. As of December 31 or calendar year, as applicable. Companies listed derive at least 50 percent of their operating revenues from carrier operations; excludes companies primarily engaged in freight forwarding, express shipping, or vehicle rental]

OPERATING REVENUE GROUP	1960		1965		1970		1973	
	Revenues ¹	Assets ²						
50 largest.....	11.8	30.7	15.7	35.6	23.0	46.4	39.6	48.2
Lowest ten.....	0.7	1.3	0.9	1.9	1.0	1.8	1.3	1.2
Second ten.....	1.1	1.9	1.3	1.7	1.4	1.7	2.2	3.6
Third ten.....	1.8	5.5	2.3	5.7	2.5	3.8	3.8	4.4
Fourth ten.....	2.7	7.0	3.7	8.3	5.6	12.7	8.0	13.7
Highest ten.....	5.5	14.4	7.6	17.9	12.6	26.4	15.3	25.2
Percent of total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Lowest ten.....	6.1	4.2	5.9	5.4	4.4	3.8	4.3	2.5
Second ten.....	9.4	6.2	8.0	4.9	5.0	3.6	7.1	7.6
Third ten.....	15.1	18.1	14.4	16.0	10.8	8.3	12.3	9.1
Fourth ten.....	23.0	24.7	23.5	23.4	24.1	27.4	26.2	28.5
Highest ten.....	46.3	46.8	48.2	50.4	54.8	50.9	50.1	52.8

¹ Gross receipts from transportation (including consolidated subsidiaries) for year.² Total assets employed in business, net of depreciation.Source: Fortune, New York, N.Y.; adapted from *The Fortune Directory*. (Copyright, by Time Inc.)

No. 915. HIGHWAY CONSTRUCTION—CONTRACTS AWARDED: 1950 TO 1973

[In millions of dollars. Prior to 1960, excludes Alaska and Hawaii. Covers federally and State owned highways only; includes force-account construction authorized to start]

OWNERSHIP AND SOURCE OF FUNDS	1950	1955	1960	1965	1968	1969	1970	1971	1972	1973
Total.....	1,523	2,619	4,030	4,935	5,305	6,625	6,520	6,327	6,505	6,510
Federally owned highways.....	36	59	129	135	84	38	52	171	206	110
State owned highways.....	1,492	2,560	3,901	4,800	5,220	6,587	6,468	6,156	6,299	6,400
Federally aided projects:										
Total value.....	798	1,256	3,097	3,896	3,711	5,048	4,877	4,595	4,876	4,554
Federal funds.....	415	667	2,218	2,976	2,766	3,784	3,619	3,422	3,598	3,342
Independent State projects:										
Total value.....	694	1,304	804	904	1,510	1,530	1,501	1,561	1,423	1,846
Toll facilities.....	228	695	165	49	63	78	40	150	99	147

Source: U.S. Bureau of the Census. In U.S. Bureau of Domestic Commerce, *Construction Review*.

No. 916. ESTIMATED COST OF CONSTRUCTION MATERIALS AND SUPPLIES USED FOR PUBLIC HIGHWAYS: 1961 TO 1972

[In millions of dollars. Excludes maintenance and repair of highways and construction of private roads, airport runways, etc.]

MATERIAL	1961		1964		1967		1970		1972	
	Total	Federally aided								
Total	2,788.3	1,932.0	3,263.5	2,283.1	3,592.3	2,447.5	4,138.2	2,807.6	4,411.9	2,730.4
Steel	770.2	530.9	746.1	522.0	733.2	533.6	855.2	580.2	935.5	577.7
Petroleum products	450.6	312.2	532.0	372.2	730.5	497.7	846.0	574.0	884.3	547.3
Cement and concrete	561.9	380.3	687.7	481.1	820.9	559.3	910.4	617.7	874.5	541.2
Aggregates	(NA)	(NA)	(NA)	(NA)	502.8	309.2	549.0	309.2	705.9	402.6
Wood products	53.0	36.7	71.4	49.9	52.7	35.9	73.6	49.9	68.8	42.6
Explosives	31.8	22.0	51.9	36.3	105.4	71.8	92.0	62.4	49.1	30.4
Clay pipe and drain tile	5.3	3.7	6.5	4.5	7.5	5.1	9.2	6.2	9.8	6.1
Fencing	(NA)	(NA)	26.0	18.2	45.2	30.8	55.2	37.4	49.1	30.4
Guardrail	(NA)	(NA)	51.9	36.3	75.3	51.3	128.7	87.3	127.7	79.1
Bridge rail	(NA)	(NA)	26.0	18.2	30.1	20.5	36.8	25.0	39.3	24.3
Signs	(NA)	(NA)	51.9	36.3	60.2	41.0	92.0	62.4	117.9	73.0
Lighting	(NA)	(NA)	71.4	49.9	45.2	30.8	101.2	68.6	117.9	73.0
Other	546.0	378.3	337.4	236.0	37.9	66.7	128.7	87.3	343.9	212.8

NA Not available.

Source: U.S. Bureau of Domestic Commerce, *Construction Review*.

No. 917. RURAL AND MUNICIPAL HIGHWAY MILEAGE, BY GOVERNMENTAL CONTROL: 1940 TO 1972

[In thousands. As of December 31. Prior to 1960, excludes Alaska and Hawaii. Municipal roads are those within incorporated places, densely populated New England towns, and certain of the more populous unincorporated areas. All other roads are classed as rural. See *Historical Statistics, Colonial Times to 1957*, series Q 246, 247, and 251]

MILEAGE AND CONTROL	1940	1950	1955	1960	1965	1968	1969	1970	1971	1972
Total mileage	(NA)	3,313	3,418	3,546	3,690	3,684	3,710	3,730	3,759	3,787
Rural mileage										
Under State control	2,990	2,990	3,045	3,116	3,183	3,152	3,162	3,169	3,168	3,173
Under local control	524	551	610	659	687	702	704	707	713	712
Under Federal control	2,466	2,336	2,333	2,345	2,346	2,275	2,275	2,275	2,256	2,252
Municipal mileage										
Under State control	(NA)	323	373	430	507	532	548	561	593	614
Under local control	27	36	42	50	65	69	72	74	77	80

NA Not available.

Source: U.S. Federal Highway Administration, *Highway Statistics*, annual.

No. 918. HIGHWAY MILEAGE OF RURAL ROADS: 1940 TO 1972

[In thousands. As of December 31. Prior to 1960, excludes Alaska and Hawaii. For definition of rural roads, see headnote, table 917. See *Historical Statistics, Colonial Times to 1957*, series Q 247-250]

TYPE AND CONTROL	1940	1950	1960	1965	1968	1969	1970	1971	1972
All rural roads	2,990	2,990	3,116	3,183	3,152	3,162	3,169	3,166	3,173
Primary State highways	329	363	403	414	425	406	408	408	408
Secondary State highways	81	88	105	112	113	121	121	122	117
County roads under State control	114	122	136	137	139	152	152	153	159
County and local roads ¹	2,466	2,417	2,472	2,520	2,475	2,483	2,488	2,483	2,489
Surfaced rural roads	1,340	1,679	2,165	2,302	2,362	2,391	2,411	2,416	2,433
Primary State highways	302	351	399	410	421	403	405	405	405
Secondary State highways	65	73	100	108	109	117	118	118	114
County roads under State control	55	83	111	118	122	135	135	137	143
County and local roads ¹	918	1,172	1,555	1,666	1,710	1,736	1,753	1,756	1,771

¹ Includes mileage in national and State parks, forests, reservations, etc., not included as part of State or local systems.

Source: U.S. Federal Highway Administration, *Highway Statistics*, annual.

Transportation—Land

No. 919. MILEAGE AND COST OF DESIGNATED FEDERAL-AID HIGHWAY SYSTEMS:
1930 TO 1973[Prior to 1960, excludes Alaska; includes Puerto Rico. See also *Historical Statistics, Colonial Times to 1957*, series Q 261-264]

YEAR	MILES OF HIGHWAY (1,000)		COST ³ (mil. dol.)			YEAR	MILES OF HIGHWAY (1,000)		COST ³ (mil. dol.)		
	Total existent ¹	Completed during year ²	Total	Federal funds	State funds		Total	Completed during year ²	Total	Federal funds	State funds
1930	183	10	287	100	137	1966	911	16	5,362	4,151	1,211
1935	214	13	242	218	24	1967	911	14	5,178	4,039	1,139
1940	284	12	269	150	119	1968	911	12	4,132	3,167	955
1945	233	8	101	76	25	1969	915	11	4,826	3,706	1,120
1950	641	20	753	390	364	1970	919	11	4,625	3,515	1,110
1955	742	23	1,287	666	621	1971	920	11	4,788	3,623	1,165
1960	867	21	3,264	2,273	992	1972	4,934	10	4,714	3,602	1,112
1965	909	17	4,569	3,430	1,139	1973	(NA)	9	5,195	3,960	1,235

¹ NA. Not available.¹ Through 1945, total existing mileage of Federal-aid primary system; beginning 1950, includes secondary system. Through 1955, data as of June 30; thereafter, as of Dec. 31.² Comprises construction and reconstruction mileage.³ Represents actual expenditures of funds on calendar-year basis. Beginning 1935, includes money spent on public works and defense highways. Beginning 1940, includes secondary highways. ⁴ Estimated.Source: U.S. Federal Highway Administration, *Highway Statistics*, annual, and other releases.

No. 920. FEDERAL-AID PAYMENTS TO STATE AND LOCAL GOVERNMENTS FOR HIGHWAY CONSTRUCTION—STATES AND PUERTO RICO: 1960 TO 1973

[In millions of dollars. For years ending June 30]

STATE OR OTHER AREA	1960	1965	1970	1972	1973	STATE OR OTHER AREA	1960	1965	1970	1972	1973
Total	2,942	4,018	1 4,524	1 4,822	1 4,879	Mont.	31	50	62	74	75
U.S.	2,935	4,011	4,520	4,816	4,870	Nebr.	27	37	38	29	31
Ala.	51	91	82	106	100	N.H.	20	16	21	24	29
Alaska	16	53	40	56	65	N.J.	53	65	110	133	131
Ariz.	31	66	68	72	62	N. Mex.	26	48	55	60	50
Ark.	32	39	43	45	44	N. Y.	217	198	256	249	212
Calif.	172	324	503	409	426	N.C.	59	51	62	81	94
Colo.	36	61	57	96	86	N. Dak.	33	31	24	32	34
Conn.	29	48	65	64	59	Ohio	150	186	243	185	188
Del.	8	17	10	17	30	Okla.	33	58	56	49	64
D.C.	16	26	32	33	23	Oreg.	54	77	70	107	126
Fla.	75	88	69	132	118	Pa.	117	142	238	199	191
Ga.	61	81	64	91	97	R.I.	13	25	28	19	49
Hawaii	4	10	33	32	45	S.C.	47	35	35	41	45
Idaho	26	40	37	39	39	S. Dak.	26	45	39	31	37
Ill.	200	209	185	241	215	Tenn.	67	108	102	113	94
Ind.	74	93	100	107	89	Tex.	198	216	227	247	240
Iowa	68	53	63	60	71	Utah	34	61	71	72	60
Kans.	51	51	50	55	63	Vt.	17	25	28	27	30
Ky.	66	60	96	88	111	Va.	53	163	112	125	137
La.	70	103	110	109	109	Wash.	44	75	93	115	164
Maine	20	24	21	30	31	W. Va.	47	56	116	165	184
Md.	27	50	66	65	82	Wis.	61	54	42	55	55
Mass.	67	78	94	79	66	Wyo.	26	48	38	36	36
Mich.	96	133	160	194	193	P.R.	7	7	4	6	0
Minn.	65	105	108	102	91	Undist. to States, etc.	2 8	17	-	-	-
Miss.	36	58	57	59	48		7	7	4	6	0
Mo.	76	114	106	131	100						

— Represents zero.

¹ Includes following amounts for 1970, 1972, and 1973, respectively, in millions of dollars: Appalachian highways, 129, 145, and 155; highway beautification, 8, 6, and 17; landscaping and scenic enhancement, 3, 2, and 2; and highway safety, 48, 74, and 68. ² Deduct.Source: U.S. Dept. of the Treasury, 1960 and 1965, *Annual Report of the Secretary of the Treasury on the State of the Finances*; thereafter, *Federal Aid to States*.

Road Mileage

551

No. 921. MUNICIPAL AND RURAL HIGHWAY MILEAGE—STATES: 1972

[As of December 31. For definition of municipal and rural roads, see headnote, table 917. Compiled for latest available year from reports of State authorities and planning survey data.]

STATE	Total muni- cipal and rural	Munic- pal	RURAL				
			Total	Type		Governmental control	
				Surfaced	Nonsur- faced	State 1	Local
United States	3,786,713	613,426	3,173,287	2,433,205	740,082	712,093	2,252,023
Alabama	85,347	17,924	67,423	61,685	5,738	19,738	47,410
Alaska	8,631	1,391	7,240	3,968	3,272	4,343	1,561
Arizona	49,301	6,308	42,903	16,977	26,016	5,484	19,571
Arkansas	77,885	9,487	68,308	53,387	15,011	12,918	53,760
California	160,472	45,676	120,706	78,453	42,343	14,278	71,467
Colorado	82,024	7,580	74,444	44,708	29,736	8,304	65,055
Connecticut	18,624	13,229	5,305	5,327	68	1,518	3,877
Delaware	5,136	797	4,339	4,326	13	4,339	—
Dist. of Columbia	1,009	1,099	(X)	(X)	(X)	(X)	(X)
Florida	90,774	25,698	71,076	49,413	21,663	17,134	52,552
Georgia	100,240	15,067	85,173	56,014	20,150	15,770	68,391
Hawaii	3,709	1,012	2,697	2,530	167	893	1,727
Idaho	55,991	3,157	52,881	27,481	25,350	4,734	25,950
Illinois	130,428	27,989	102,439	96,107	6,332	13,357	88,840
Indiana	90,973	15,620	75,344	71,799	3,545	10,267	65,021
Iowa	112,930	13,768	99,162	93,231	5,931	9,086	90,007
Kansas	134,683	11,322	123,361	89,995	33,366	10,118	113,149
Kentucky	69,639	5,751	63,888	56,568	7,320	23,904	30,375
Louisiana	53,645	11,180	42,465	38,901	3,564	14,189	27,953
Maine	21,444	2,521	18,923	17,444	1,470	10,936	7,829
Maryland	26,737	4,180	22,557	22,503	54	4,985	17,427
Massachusetts	29,692	23,554	6,138	5,989	149	1,194	4,895
Michigan	118,060	20,232	97,828	80,732	17,006	7,968	87,200
Minnesota	128,064	17,444	110,620	99,010	11,580	11,383	97,335
Mississippi	66,824	6,977	59,817	57,818	2,029	9,723	49,885
Missouri	115,500	15,536	100,054	93,768	6,286	30,060	69,270
Montana	77,906	2,386	75,520	42,168	33,352	12,126	53,876
Nebraska	98,547	6,880	91,667	70,637	21,030	9,594	81,666
Nevada	40,659	1,021	47,738	14,513	33,195	6,151	41,587
New Hampshire	14,974	4,839	10,135	8,024	2,111	3,049	6,966
New Jersey	32,336	18,731	13,605	12,363	1,242	1,562	12,030
New Mexico	68,075	4,885	63,190	17,180	40,010	11,704	45,326
New York	107,295	40,779	66,516	62,845	3,671	12,930	53,551
North Carolina	86,611	14,179	72,432	66,274	6,158	71,004	—
North Dakota	106,310	3,168	103,148	66,798	36,350	6,662	95,188
Ohio	109,547	23,724	85,823	84,271	1,552	16,947	68,847
Oklahoma	107,881	14,338	93,543	68,862	24,681	11,501	82,008
Oregon	99,531	6,567	92,964	56,497	36,467	9,285	35,258
Pennsylvania	114,144	24,229	89,015	75,113	14,802	42,372	46,689
Rhode Island	5,472	4,450	1,022	912	110	499	523
South Carolina	50,938	7,019	52,919	35,095	17,824	31,822	20,620
South Dakota	82,790	2,978	79,812	57,653	22,159	8,736	69,454
Tennessee	80,577	11,951	68,623	66,921	1,702	8,290	59,115
Texas	250,546	51,834	108,712	137,088	61,024	61,004	136,082
Utah	47,331	4,468	42,863	19,015	23,848	4,828	22,000
Vermont	14,567	1,011	13,556	11,649	1,907	2,575	10,802
Virginia	61,826	9,278	52,548	51,805	743	49,539	860
Washington	80,279	9,993	70,286	54,859	15,427	14,071	39,530
West Virginia	36,170	3,643	32,527	23,417	9,110	31,833	—
Wisconsin	103,822	14,375	89,447	83,960	5,487	10,788	78,591
Wyoming	40,631	1,280	39,342	16,489	22,853	5,881	20,948

[—] Represents zero. ^X Not applicable.

¹ Includes 21,670 miles of State park, forest, institutional, and other roads, and 2,935 miles of toll facilities that are not a part of the State or local highway system. Also includes mileage of county roads under State control in all counties of Delaware, North Carolina, and West Virginia; 10 counties in Alabama; all but 2 counties in Virginia; some county mileage in Kentucky and Nevada; farm-to-market mileage in Louisiana; and the State-aid system in Maine.

² Mileage in Federal parks, forests, and reservations that are not a part of the State highway system.

Source: U.S. Federal Highway Administration, *Highway Statistics, 1972*.

**No. 922. DESIGNATED FEDERAL-AID HIGHWAY SYSTEMS, 1972, AND PROJECTS,
1973—STATES AND PUERTO RICO**

[Systems as of December 31, and projects as of June 30. Projects comprise those financed from the Federal-aid primary, secondary, urban, rural, TOPICS (urban traffic operations program to increase capacity and safety), and interstate funds. See text, pp. 545 and 546.]

STATE OR OTHER AREA	SYSTEMS (miles), 1972					PROJECTS, 1973 ¹					
	Primary			Second- ary	Completed during fiscal year			Under construction			
	Total	National system of interstate highways	Federal-aid, urban highway system		Miles	Total cost (mil. dol.)	Federal funds (mil. dol.)	Miles	Total cost (mil. dol.)	Federal funds (mil. dol.)	
	Total	Open to traffic									
Total	270, 259	42, 500	34, 393	12, 753	651, 333	9, 652	5, 163	3, 952	16, 311	16, 845	13, 004
U.S.—	269, 700	42, 500	34, 393	12, 649	650, 207	9, 648	5, 148	3, 945	16, 285	16, 798	12, 981
Ala.	6, 585	898	645	143	16, 136	125	151	121	295	478	382
Alaska	3, 252	—	—	—	3, 204	230	47	43	202	110	96
Ariz.	3, 640	1, 178	927	240	4, 011	141	67	58	108	148	134
Ark.	4, 117	526	502	99	14, 541	170	70	53	322	131	86
Calif.	9, 691	2, 288	1, 978	1, 145	15, 936	348	630	532	436	1, 131	935
Colo.	4, 638	976	781	260	4, 405	117	44	32	206	242	195
Conn.	1, 336	347	276	444	1, 251	3	51	42	20	290	233
Del.	628	41	29	109	1, 462	13	34	26	37	116	89
D.C.	168	29	11	1	128	10	26	22	18	188	145
Fla.	5, 770	1, 309	904	965	14, 830	206	92	75	294	349	260
Ga.	9, 105	1, 150	852	126	20, 472	181	57	39	525	471	347
Hawaii	602	52	22	27	515	3	10	8	22	185	140
Idaho	3, 233	612	537	12	5, 648	92	25	21	287	87	74
Ill.	14, 154	1, 728	1, 368	304	15, 352	276	261	198	694	672	520
Ind.	5, 771	1, 129	1, 001	391	18, 017	101	114	82	238	274	192
Iowa	10, 504	781	688	172	33, 238	527	81	54	814	162	117
Kans.	7, 820	822	786	141	24, 467	350	62	43	547	183	133
Ky.	4, 047	736	585	147	15, 120	60	91	73	176	274	195
La.	3, 183	713	423	138	9, 062	65	92	77	297	568	456
Maine	1, 941	312	280	64	2, 596	68	41	31	68	79	56
Md.	2, 490	358	328	44	7, 764	80	74	58	106	397	314
Mass.	2, 347	470	417	288	2, 365	38	67	50	161	443	336
Mich.	6, 920	1, 175	990	1, 412	26, 591	360	139	106	732	706	560
Minn.	8, 157	914	696	153	31, 169	499	82	58	926	420	327
Miss.	6, 577	683	539	57	16, 535	257	66	47	434	167	118
Mo.	8, 517	1, 146	970	450	23, 710	198	221	167	342	331	232
Mont.	6, 387	1, 189	886	29	5, 963	253	95	82	320	181	132
Nebr.	6, 020	481	441	94	17, 520	272	35	20	512	82	52
Nev.	2, 303	535	438	19	3, 819	72	35	32	55	118	111
N.H.	1, 258	214	186	17	1, 784	34	23	16	58	76	59
N.J.	2, 144	384	230	248	1, 844	48	102	85	111	757	560
N. Mex.	3, 084	999	883	52	6, 050	164	81	67	107	95	81
N.Y.	11, 681	1, 337	1, 158	1, 005	18, 707	43	264	174	128	835	600
N.C.	4, 739	842	602	222	29, 338	139	134	92	377	350	248
N. Dak.	4, 711	571	508	5	13, 961	813	44	32	721	74	52
Ohio	7, 899	1, 534	1, 382	421	22, 413	89	181	134	315	716	543
Okl.	7, 834	809	755	78	15, 174	181	56	36	339	284	170
Oreg.	4, 083	735	660	140	9, 049	96	138	122	164	306	252
Pa.	8, 555	1, 574	1, 410	100	13, 968	126	214	138	320	1, 251	942
R.I.	431	100	67	141	378	15	47	41	19	88	55
S.C.	5, 402	758	572	37	21, 453	350	73	57	750	154	104
S. Dak.	5, 890	679	545	10	13, 802	528	49	35	461	78	59
Tenn.	6, 908	1, 045	802	124	11, 991	331	111	86	499	375	286
Tex.	17, 747	3, 161	2, 560	1, 404	41, 762	644	286	202	940	565	415
Utah	2, 645	939	565	41	4, 264	80	27	24	375	227	206
Vt.	1, 584	320	251	—	2, 023	40	18	15	89	61	50
Va.	4, 683	1, 073	873	143	20, 091	77	146	117	306	401	328
Wash.	3, 932	763	593	587	12, 225	271	132	107	237	381	319
W. Va.	2, 585	512	338	10	10, 857	24	70	56	137	594	508
Wis.	6, 576	569	456	210	19, 856	177	49	30	433	153	98
Wyo.	3, 914	914	797	—	2, 786	241	34	29	106	49	43
P.R.	559	—	—	104	1, 126	4	15	7	26	47	23

[—] Represents zero.

¹ Excludes highway planning and research work financed with 1½ percent Federal-aid highway funds available pursuant to 23 U.S.C. 307(c)(2). (Completed, 108 million total cost, \$77 million Federal funds; underway, \$230 million total cost, \$163 million Federal funds.)

Source: U.S. Federal Highway Administration, *Federal Aid and Allied Highway Programs*, 1973.

Highway Debt—Gasoline Tax

553

No. 923. PUBLIC HIGHWAY DEBT—LONG-TERM HIGHWAY OBLIGATIONS OF STATE AND LOCAL GOVERNMENTS: 1950 TO 1974

[In millions of dollars. State data are for calendar years; local data are for varying fiscal years. 1950 excludes Alaska and Hawaii. Excludes duplicated and interunit obligations, except as noted. Municipal obligations include data for all municipalities and other political subdivisions urban in character. See *Historical Statistics, Colonial Times to 1957*, series Q 279, for State obligations outstanding.]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972	1973 (prel.)	1974 est.
Total debt issued ¹	652	1,174	1,206	1,070	2,022	1,886	3,341	2,372	2,308	2,640
State	400	646	680	586	1,351	1,305	2,649	1,672	1,553	1,850
County and local rural	90	205	190	169	241	174	196	200	205	210
Municipal	162	323	336	315	430	407	496	500	550	580
Total debt redeemed ²	322	421	616	855	1,122	1,252	1,281	1,256	1,333	1,384
State	143	191	300	459	705	782	815	783	853	897
County and local rural	83	89	96	123	137	162	145	150	155	160
Municipal	96	141	220	273	280	318	321	323	325	327
Total debt outstanding	4,436	9,658	13,166	15,316	18,572	19,107	21,068	22,184	23,159	24,415
State	2,098	6,619	9,384	10,905	13,380	13,903	15,737	16,626	17,326	18,279
County and local rural	872	1,027	1,280	1,363	1,658	1,685	1,678	1,728	1,778	1,828
Municipal	1,468	2,012	2,502	3,018	3,534	3,519	3,653	3,830	4,055	4,308

¹ Excludes refunding issues. ² Excludes redemptions by refunding.

Source: U.S. Federal Highway Administration, releases.

No. 924. FEDERAL AND STATE GASOLINE TAX—STATES: 1950 TO 1973

[Cents per gallon. Where 2 figures appear in a cell, the former is tax in effect at beginning of year, the latter is tax at end of year. See also *Historical Statistics, Colonial Times to 1957*, series Q 328-329]

STATE	1950	1960	1965	1970	1973 ¹	STATE	1950	1960	1965	1970	1973 ¹
Federal tax	1.5	4	4	4	4	Mississippi	6-7	7	7	7-8	8-9
State average ²	4.65	5.92	6.39	7.02	(NA)	Missouri	2	3	5	5	7
Alabama	6	7	7	7	7	Montana	6	6	8	7	7
Alaska	(*)	5-7	8	8	8	Nebraska	6-5	7	7-7.5	8.5	8.5
Arizona	5	5	6-7	7	7	Nevada	4.5	6	6	6	6
Arkansas	6.5	6.5	6.5-7.5	7.5	7.5-8.5	New Hampshire	4	7	7	7	9
California	4.5	6	7-8-7	7	7	New Jersey	3	5	6	7	8
Colorado	6	6	6-7	7	7	New Mexico	7	6	6	7	7
Connecticut	4	6	6	8	10	New York	4	6	6	7	8
Delaware	5	5	6-7	7	8-9	North Carolina	7	7	7	9	9
Dist. of Columbia	4	6	6	7	8	North Dakota	4	6	6	7	7
Florida	7	7	7	7	8	Ohio	4	7	7	7	7
Georgia	7	6.5	6.5	6.5	7.5	Oklahoma	6.5	6.5	6.5	6.5	6.5
Hawaii	4	4	4	4	5	Oregon	6	6	6	7	7
Idaho	6	6	6	7	8.5	Pennsylvania	5	5	7	7-8	8
Illinois	3	5	5	7.5	7.5	Rhode Island	4	6-7	7	8	8
Indiana	4	6	6	6	8	South Carolina	6-7	7	7	7	8
Iowa	4	6	6-7	7	7	South Dakota	4	6	6	7	7
Kansas	5	5	5	7	7	Tennessee	7	7	7	7	7
Kentucky	7	6-7	5-7	5-7	7	Texas	4	5	5	5	5
Louisiana	9	7	7	8	8	Utah	4	6	6	7	7
Maine	6	7	7	8	9	Vermont	5	6.5	6.5	8	9
Maryland	5	6	7	7	9	Virginia	6	6-7	7	8	9
Massachusetts	3	5.5	5.5-6.5	6.5	7.5	Washington	6.5	6.5	7.5	9	8.5
Michigan	3	6	6	7	7-9	West Virginia	5	7	7	7-8.5	8.5
Minnesota	5	5	6	7	7	Wisconsin	4	6	6	7	7
						Wyoming	4	5	5	7	7

NA. Not available. ¹ In effect Dec. 31.

² Weighted average, based on net gallons taxed. Prior to 1960, excludes Alaska and Hawaii.

³ No tax.

⁴ State tax rate per gallon is 8 cents in Hawaii County and 5 cents in other counties.

⁵ Trucks or combinations with more than 2 axles pay motor-fuel tax rate of 9 cents per gallon in Kentucky and Virginia. (Prior to July 1960, the tax in Virginia was 8 cents.)

Source: U.S. Federal Highway Administration, *Highway Statistics*, annual.

Transportation—Land

No. 925. DISBURSEMENTS OF STATE HIGHWAY FUNDS—TOTAL, 1950 TO 1972, AND BY PURPOSE, 1972, STATES

[In millions of dollars. Comprises disbursements, whether from current revenues or proceeds of loans, for construction, maintenance, interest and principal payments on highway bonds, transfers to local units, and miscellaneous purposes. Includes transactions by State toll authorities. Beginning 1965, excludes amounts allocated for collection and nonhighway purposes, and bonds redeemed by refunding. See also *Historical Statistics, Colonial Times to 1957*, series Q 273-278.]

STATE	1950	1955	1960	1965	1970	1971	Total	1972			For county and local roads and streets ³	
								For State-administered highways				
								Capital outlay, roads and bridges ¹	Maintenance and traffic services ¹	Other ²		
U.S. ⁴	3,562	6,034	8,957	11,465	16,535	17,751	18,204	9,384	2,236	3,338	3,246	
Ala.	49	87	174	228	290	315	310	171	27	45	67	
Alaska	(NA)	(NA)	19	71	99	111	139	74	22	40	3	
Ariz.	20	33	72	106	158	176	196	104	23	28	41	
Ark.	46	55	95	119	145	173	172	94	17	24	37	
Calif.	268	558	786	1,110	1,527	1,465	1,455	714	107	225	400	
Colo.	38	56	91	129	177	208	205	118	22	19	46	
Conn.	38	79	161	216	293	308	328	129	37	145	15	
Del.	32	26	36	87	73	77	88	40	10	36	2	
D.C.	11	24	48	42	68	64	62	—	—	17	45	
Fla.	93	152	316	316	442	551	626	389	45	100	92	
Ga.	74	100	167	208	278	310	357	200	43	50	64	
Hawaii	(NA)	(NA)	23	35	74	62	74	47	5	10	12	
Idaho	19	27	44	66	81	83	95	48	13	11	23	
Ill.	113	229	475	471	889	989	922	444	91	121	266	
Ind.	69	200	241	286	380	414	421	178	44	68	131	
Iowa	79	109	169	193	291	325	320	147	29	25	119	
Kans.	50	110	100	134	177	190	197	87	35	36	39	
Ky.	67	102	138	223	326	412	500	322	57	99	22	
La.	71	115	204	240	319	373	394	220	37	72	65	
Maine	24	65	62	80	98	122	114	58	32	21	3	
Md.	84	138	166	217	388	482	440	178	30	86	146	
Mass.	98	203	237	284	368	348	349	125	45	166	13	
Mich.	106	249	418	427	570	645	670	267	49	110	244	
Minn.	65	101	167	230	297	322	326	168	43	34	81	
Miss.	42	75	110	160	205	242	237	120	14	36	67	
Mo.	53	105	165	241	337	357	323	190	68	40	30	
Mont.	22	30	54	86	121	122	123	79	11	12	21	
Nebr.	36	59	95	97	154	150	153	68	14	17	54	
Nev.	9	15	22	58	59	69	69	42	9	13	5	
N.H.	14	30	50	51	75	78	85	38	20	20	7	
N.J.	188	303	221	291	602	569	652	341	74	203	34	
N. Mex.	26	39	64	101	116	110	122	78	23	13	8	
N. Y.	304	471	652	752	1,237	1,272	1,312	735	206	256	115	
N.C.	136	141	179	219	396	416	439	233	92	87	27	
N. Dak.	22	28	50	51	75	80	75	38	7	7	23	
Ohio	147	383	523	661	832	861	830	301	80	223	226	
Okla.	73	113	134	179	237	316	265	132	29	37	67	
Oreg.	50	79	113	185	211	270	281	153	26	31	71	
Pa.	279	350	423	667	1,074	1,176	1,150	545	268	236	101	
R.I.	14	30	42	62	54	54	57	26	10	21	—	
S.C.	46	57	109	114	157	178	192	119	39	20	14	
S. Dak.	20	34	57	68	81	86	90	52	11	10	17	
Tenn.	79	108	187	238	304	315	348	183	27	44	94	
Tex.	178	282	493	513	730	732	728	469	114	99	41	
Utah	15	28	49	89	114	109	129	92	9	14	14	
Vt.	10	17	43	53	80	76	81	42	13	19	7	
Va.	76	112	211	353	447	488	479	292	79	85	23	
Wash.	78	127	171	235	372	404	430	207	47	84	92	
W. Va.	51	64	110	169	317	399	446	324	48	74	—	
Wis.	68	109	171	189	268	276	279	113	31	42	93	
Wyo.	14	22	44	65	72	71	76	50	9	7	10	

¹ Represents zero. ² NA. Not available.

¹ Includes some administration, engineering, and miscellaneous disbursements. ² Comprises following disbursements, in millions of dollars: Administration and miscellaneous, 892; highway law enforcement, 991; bond interest, 690; and bond redemption, 765. ³ Expenditures on county roads under State control in Ala. (10 counties), Del., N.C., Va. (all except 2 counties), and W. Va. included with those for State-administered highways. ⁴ Prior to 1960, excludes Alaska and Hawaii.

Source: U.S. Federal Highway Administration, *Highway Statistics*, annual.

Motor Vehicles

555

No. 926. MOTOR VEHICLES—SUMMARY STATISTICS: 1950 TO 1973

[Excludes Alaska and Hawaii, except as noted]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973
SALES, EXPORTS, IMPORTS, AND SCRAPPAGE¹								
Passenger car factory sales.....	1,000	6,666	7,920	6,675	9,306	6,457	8,585	8,824
4-door sedans.....	1,000	3,247	3,044	2,897	2,744	1,486	1,763	1,894
2-door sedans, coaches and coupes ²	1,000	2,794	1,601	1,094	793	709	1,144	1,180
2-door and 4-door "hard-tops".....	1,000	267	2,189	1,517	4,251	3,896	4,602	4,533
Convertibles (except "hard-top").....	1,000	208	240	305	509	92	88	62
Station wagons ³	1,000	142	759	1,059	1,001	662	984	1,152
Chassis.....	1,000	9	18	3	7	2	4	4
Truck and bus factory sales.....	1,000	1,337	1,249	1,194	1,752	1,692	2,053	2,447
Passenger cars (new), exported ⁴	1,000	153	254	145	205	359	463	471
Passenger cars (new), imported.....	1,000	21	57	444	559	2,013	2,587	2,486
Exports.....	mil. dol.	794	1,367	1,411	2,198	3,871	4,590	5,296
Passenger cars (new).....	mil. dol.	179	380	235	393	822	1,170	1,303
Trucks and buses (new).....	mil. dol.	217	340	382	328	636	649	714
Rubber tires and tubes.....	mil. dol.	47	82	77	55	40	41	52
Parts and accessories (incl. used vehicles).....	mil. dol.	350	565	717	1,421	2,373	2,730	3,227
Imports of new passenger cars.....	mil. dol.	21	69	513	640	3,719	5,134	5,704
Vehicles scrapped ⁵	1,000	3,234	4,302	4,783	7,070	7,644	7,813	(NA)
Passenger cars ⁵	1,000	2,598	3,773	4,200	6,163	6,621	6,650	(NA)
Trucks and buses ⁵	1,000	636	619	583	907	1,020	1,193	(NA)
Average age of—								
Passenger cars in use.....	years	7.0	5.85	5.86	5.90	5.55	5.66	5.74
Motor trucks in use.....	years	7.8	6.72	7.68	7.98	7.33	7.35	7.15
PARTS AND CHEMICAL SHIPMENTS								
Tires, passenger car, ⁷ total.....	mil.	84.4	93.7	105.7	148.5	168.6	185.5	194.9
Original equipment.....	mil.	36.7	42.6	36.3	51.4	37.5	45.7	51.4
Replacement.....	mil.	47.1	50.2	68.5	94.9	129.6	138.3	141.6
Export.....	mil.	.6	1.0	.9	2.2	1.5	1.6	1.9
Tires, truck and bus, ⁷ total.....	mil.	15.2	14.8	13.9	20.4	25.7	29.1	33.0
Original equipment.....	mil.	4.7	4.8	3.9	6.9	8.6	10.3	12.6
Replacement.....	mil.	9.7	9.1	9.2	12.8	16.7	18.4	20.1
Export.....	mil.	.8	.9	.8	.7	.4	.4	.5
Replacement automobile batteries ⁸	mil.	24.4	25.8	26.3	29.5	37.0	39.1	43.2
Antifreeze ⁹	mil. gal.	(NA)	110.0	120.9	143.1	177.6	192.6	10.1
Heavy duty brake fluid ¹⁰	mil. gal. ¹¹	(NA)	5.7	9.4	8.0	10.6	10.7	200.7
SPECIAL MOTOR-VEHICLE TAXES¹²								
Federal excise ¹³	bil. dol.	1.5	2.7	4.4	5.7	6.8	7.1	5.1
State motor veh. carrier receipts ¹⁴	bil. dol.	.9	1.5	1.9	2.5	3.8	4.1	4.4
State motor fuel, net ¹⁴	bil. dol.	1.7	2.5	3.4	4.5	6.5	6.9	7.6
MOTOR VEHICLE REGISTRATION¹⁵								
World.....	mil.	70.4	95.9	126.9	178.0	246.5	256.1	280.6
United States ¹⁴	mil.	49.2	62.7	73.9	90.4	108.4	112.9	118.6
Other North and Central America.....	mil.	3.2	4.9	6.8	8.2	11.3	11.9	12.9
South America.....	mil.	1.3	1.8	3.0	5.1	8.1	9.0	9.9
Europe.....	mil.	12.5	19.6	33.8	56.5	84.7	84.7	98.0
Africa.....	mil.	1.2	1.8	2.5	3.4	4.5	5.1	4.7
Asia.....	mil.	1.2	2.2	3.6	9.7	23.5	26.1	29.4
Oceania.....	mil.	1.8	2.8	3.5	4.7	6.0	6.4	6.9

NA Not available.

¹ Source: Exports and imports from U.S. Dept. of Commerce. ² Includes business coupes.

³ Excludes station wagons on commercial vehicle chassis. ⁴ Includes export factory sales.

⁵ Estimated.

⁶ Includes Alaska and Hawaii. ⁷ Source: The Rubber Manufacturers Association, Inc., New York, N.Y.

Beginning 1965, figures for "Tires, passenger car" include motorcycle tires. ⁸ Source: Battery Council International, Burlingame, Calif. ⁹ Preliminary.

¹⁰ Source: Chemical Specialties Manufacturers Association, Inc., New York, N.Y.

¹¹ Figures represent fluid compounded rather than sold.

¹² Special taxes on motor-vehicle users. Excludes income and property taxes on motor vehicle, body, parts and tire factories, garages, dealers, repair shops, terminal and truck, including taxicab and bus, operating companies.

¹³ Source: U.S. Dept. of the Treasury and U.S. Dept. of Transportation. Includes amounts collected on use of vehicles over 26,000 pounds as follows, in millions of dollars: 1960, 46; 1965, 103; 1969, 134; 1970, 141; 1971, 182; 1972, 163; and 1973, 202. ¹⁴ Source: U.S. Dept. of Transportation.

¹⁵ Includes cars, trucks, and buses. Source: Through 1968, U.S. Dept. of State and overseas sources; thereafter, U.S. Bureau of Domestic Commerce, *World Motor Vehicle Production & Registration, 1970-73*.

Source: Except as noted, Motor Vehicle Manufacturers Association of the United States, Inc., Detroit, Mich., *Automobile Facts and Figures*.

Transportation—Land

No. 927. MOTOR-VEHICLE TRAVEL, BY TYPE OF VEHICLE: 1940 TO 1972

[In billions of vehicle-miles, except averages. Prior to 1960, excludes Alaska and Hawaii. Estimates based on automatic traffic recorder data. Urban travel includes all travel in municipalities and most travel in urbanized areas. All other travel is classed as rural. See also *Historical Statistics, Colonial Times to 1957*, series Q 321-327]

ITEM	1940	1950	1955	1960	1965	1969	1970	1971	1972 est.
Total travel.....	302.2	458.2	603.4	718.8	887.8	1,070.6	1,120.7	1,186.3	1,268.3
TYPE OF VEHICLE									
Passenger vehicles.....	252.3	367.7	492.0	592.4	716.4	863.9	906.0	959.3	1,008.6
Rural.....	122.0	183.2	265.7	305.5	336.0	395.6	409.3	431.8	438.9
Urban.....	130.3	184.5	226.4	286.9	380.4	468.3	496.8	527.4	569.7
Passenger cars ¹	249.6	363.6	487.5	588.1	711.6	858.9	901.0	954.2	1,003.5
Rural.....	120.5	181.1	263.1	303.3	333.4	392.8	406.4	428.9	436.0
Urban.....	129.1	182.5	224.5	284.8	378.2	466.0	494.5	525.2	567.5
Buses.....	2.7	4.1	4.5	4.4	4.8	5.0	5.0	5.1	5.1
Rural.....	1.4	2.1	2.6	2.3	2.6	2.8	2.8	2.9	2.1
Urban.....	1.2	2.0	1.9	2.1	2.2	2.3	2.2	2.2	3.0
Trucks and combinations.....	49.9	90.6	111.4	126.4	171.4	206.7	214.7	227.0	259.7
Rural.....	30.2	56.8	70.5	81.7	102.8	130.4	134.1	141.5	151.3
Urban.....	19.7	33.8	40.9	44.7	68.6	76.3	80.6	85.5	108.4
AVERAGE MILES PER VEHICLE									
Passenger vehicles.....	9,129	9,078	9,400	9,474	9,810	9,650	9,708	9,938	9,980
Passenger cars ¹	9,080	9,020	9,359	9,446	9,286	9,633	9,733	9,926	9,969
Buses.....	18,580	20,910	17,658	16,004	15,215	13,826	13,306	12,819	12,553
Trucks and combinations.....	10,626	10,776	10,697	10,583	11,587	11,565	11,450	11,465	12,229

¹ Includes taxicabs and motorcycles.

Source: U.S. Federal Highway Administration, *Highway Statistics*, annual.

No. 928. MOTOR VEHICLES—FACTORY SALES AND REGISTRATIONS: 1910 TO 1973

[Prior to 1960, registrations exclude Alaska and Hawaii, except as noted. See also *Historical Statistics, Colonial Times to 1957*, series Q 310-317]

YEAR	FACTORY SALES ¹						REGISTRATIONS ⁵ (1,000)			
	Number (1,000)			Wholesale value ³			Total cars, trucks, buses	Passen- ger cars and taxis ⁴	Trucks and buses ⁶	Motor- cycles
	Total cars, trucks, buses	Pas- sen- ger cars	Trucks and buses ²	Passenger cars		Trucks and buses ²				
				Total (mil. dol.)	Aver- age ⁴	Total (mil. dol.)	Aver- age ⁴			
1910.....	187	181	6	215	\$1,188	10	\$1,667	7,470	458	10
1920.....	2,227	1,906	322	1,809	949	423	1,314	7,9, 251	8,131	1,108
1930.....	3,363	2,787	575	1,644	590	391	680	7,26, 704	23,035	3,715
1940.....	4,472	3,717	755	2,371	638	588	752	7,32, 525	27,466	4,987
1950.....	8,003	6,666	1,337	8,468	1,270	1,708	1,277	7,49, 300	40,389	8,823
1960.....	7,869	6,675	1,184	12,184	1,822	2,351	1,969	73,869	61,682	12,187
1965.....	11,057	9,306	1,752	18,380	1,975	3,734	2,131	90,341	75,241	15,100
1968.....	10,718	8,822	1,896	19,352	2,194	4,670	2,463	100,876	83,595	17,280
1969.....	10,147	8,224	1,923	18,751	2,280	4,937	2,567	105,076	86,855	18,221
1970.....	8,239	6,547	1,692	14,630	2,235	4,820	2,348	108,375	89,230	19,145
1971.....	10,638	8,585	2,063	21,410	2,494	5,964	2,905	112,999	92,799	20,200
1972.....	11,271	8,824	2,447	23,133	2,622	7,654	3,128	118,506	96,860	21,646
1973.....	12,637	9,658	2,980	26,350	2,728	9,150	3,070	124,478	101,237	23,241

¹ Represents zero. ² Beginning 1965, excludes tactical vehicles. ³ A substantial part of the trucks and buses reported comprises chassis without body; hence, excludes the value of bodies for these chassis. ⁴ Beginning 1940, includes value of standard equipment. ⁵ Averages do not indicate price changes since total values may reflect changes in number of makes, models, and/or body types from year to year. ⁶ Includes publicly owned vehicles. Excludes vehicles owned by military services. ⁷ Prior to 1930, buses included with passenger cars. ⁸ Total includes, components exclude, Hawaii. ⁹ Estimate.

Source: Factory sales—Motor Vehicle Manufacturers Association of the United States, Inc., Detroit, Mich.; *Automobile Facts and Figures*, annual; registrations—U.S. Federal Highway Administration, *Highway Statistics*, annual.

Trucks and Truck-Miles

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No. 929. TRUCKS AND TRUCK-MILES, BY VEHICLE AND OPERATIONAL CHARACTERISTICS: 1967 AND 1972

ITEM	1967				1972			
	Trucks (1,000)		Truck-miles (bil.)		Trucks (1,000)		Truck-miles (bil.)	
	Total	Exclud-ing pickups, panels	Total	Exclud-ing pickups, panels	Total	Exclud-ing pickups, panels	Total	Exclud-ing pickups, panels
Total trucks	15,360	4,711	173.7	73.2	19,745	5,283	244.5	88.8
Major use:								
Agriculture	3,710	1,229	27.7	7.7	4,258	1,433	37.1	10.2
Forestry and lumbering	156	118	2.4	1.8	187	121	3.4	2.3
Mining	104	59	1.0	.77	45	1.4	1.0	1.0
Construction	1,444	600	16.8	6.5	1,693	739	23.2	9.6
Manufacturing	372	230	7.1	5.6	443	260	10.1	7.4
Wholesale and retail trade	1,887	1,015	29.6	18.2	1,875	928	32.0	18.6
For hire	677	603	23.9	22.9	770	678	29.6	28.3
Personal transportation	5,169	167	43.3	.9	8,122	191	79.5	1.4
Utilities and services	1,231	400	13.2	4.3	1,995	708	23.8	7.5
All other	610	290	7.9	4.3	327	182	4.4	2.6
Body type:								
Pickup, panel, multistop, etc.	10,804	(X)	103.0	(X)	14,464	(X)	155.7	(X)
Platform and cattlerack	2,194	2,194	21.7	21.7	2,460	2,460	27.6	27.6
Vans	897	897	26.0	26.0	1,134	1,134	35.1	35.1
Utility truck	179	179	1.9	1.9	370	370	4.1	4.1
Dump truck	405	405	5.3	5.3	468	468	6.5	6.5
Tank truck	323	323	7.2	7.2	316	316	8.0	8.0
All other	558	713	8.5	10.9	586	586	7.5	7.5
Type of fuel:								
Gasoline	(NA)	4,062	(NA)	45.1	17,342	4,195	186.9	44.9
Diesel and LPG	(NA)	516	(NA)	26.1	860	808	40.8	39.9
Not reported	(NA)	133	(NA)	2.0	1,544	281	16.8	4.1
Annual miles:								
Less than 5,000 miles ¹	5,560	1,800	15.5	4.6	4,621	1,578	10.5	3.5
5,000-9,999 miles	3,041	707	22.2	5.1	5,540	1,159	37.3	7.8
10,000-19,999 miles	4,716	1,126	59.9	14.7	6,598	1,816	88.0	17.0
20,000-29,999 miles	1,080	405	24.1	9.3	1,647	453	36.7	10.3
30,000-49,999 miles	522	306	18.9	{ 39.4	772	328	27.3	12.0
50,000 miles or more	461	387	33.1	}	570	450	49.7	38.2
Year model:								
1-2 years old	2,549	653	43.9	17.9	2,915	634	54.8	19.4
3-4 years old	2,898	776	45.9	19.5	3,722	866	62.9	24.0
Over 4 years old	9,913	3,282	88.9	35.7	13,110	3,784	126.9	45.5
Vehicle type:								
Single-unit trucks	(NA)	3,031	(NA)	40.2	18,836	4,392	202.2	46.8
2-axle	(NA)	3,306	(NA)	32.3	18,289	3,882	193.3	38.1
3-axle	(NA)	555	(NA)	7.9	548	529	8.9	8.7
Combination trucks	(NA)	780	(NA)	33.0	909	892	42.3	42.0
3-axle	(NA)	156	(NA)	3.7	125	123	3.0	3.0
4-axle	(NA)	286	(NA)	9.9	273	273	9.5	9.5
5-axle	(NA)	263	(NA)	16.1	417	417	26.3	26.3
All other	(NA)	75	(NA)	3.2	95	79	3.6	3.3
Range of operation:								
Local	(NA)	3,722	(NA)	35.8	16,057	4,037	163.2	40.1
Short range	(NA)	623	(NA)	19.5	1,717	710	41.3	23.3
Long range	(NA)	228	(NA)	16.1	460	312	24.5	22.4
Not reported	(NA)	138	(NA)	1.7	1,504	225	15.5	3.0
Size class:								
Light	11,318	(NA)	106.0	(NA)	14,508	1,084	154.5	10.2
Medium	2,098	(NA)	19.8	(NA)	2,822	1,940	29.3	18.8
Light-heavy	806	(NA)	9.9	(NA)	828	792	8.8	8.3
Heavy-heavy	1,138	(NA)	38.0	(NA)	1,500	1,468	52.0	51.5

NA Not available. X Not applicable.

¹ For 1967, this category is "Less than 6,000 miles."

Source: U.S. Bureau of the Census, U.S. Census of Transportation: 1967, vol. II, and 1972, TC72-T52.

Transportation—Land

No. 930. MOTOR-VEHICLE REGISTRATIONS, 1950 TO 1973, AND DRIVERS LICENSES, 1972, BY STATES

[In thousands, except as indicated. Motor-vehicle registrations include publicly, privately, and commercially owned vehicles; for uniformity, figures have been adjusted to a calendar-year basis as registration years in States differ; figures represent net numbers where possible, excluding re-registrations and nonresident registrations.]

STATE	AUTOMOBILES, TRUCKS, AND BUSES						DRIVERS LICENSES, 1972				
	1973				Motorcycles (incl. official), ¹ 1973		Total ²	Percent			
	1950	1960	1965	1970	Total	Private and commercial		Male drivers	Drivers under 25 years		
U.S. ³	49,300	73,869	90,341	108,375	125,157	101,004	22,308	4,378	118,414	55.8	22.1
Ala.	686	1,282	1,663	1,966	2,354	1,821	500	76	1,806	56.2	22.0
Alaska	(NA)	81	109	139	161	107	48	12	154	53.3	25.0
Ariz.	271	624	826	1,093	1,419	1,030	355	57	1,184	55.8	25.0
Ark.	477	708	914	1,043	1,185	800	367	39	1,119	56.1	20.8
Calif.	4,620	7,799	9,989	11,901	13,413	10,833	2,376	646	12,650	55.0	20.9
Colo.	564	924	1,158	1,442	1,803	1,346	428	82	1,536	50.2	26.4
Conn.	716	1,107	1,415	1,733	1,891	1,715	152	57	1,798	52.2	20.3
Del.	108	192	244	312	333	275	53	6	349	53.6	21.9
D.C.	195	206	236	257	261	234	16	5	345	60.6	16.8
Fla.	985	2,367	3,037	4,120	5,347	4,613	761	153	4,361	54.2	21.3
Ga.	898	1,512	1,990	2,584	3,170	2,519	612	91	3,206	56.1	22.0
Hawaii	138	231	310	405	478	413	57	10	492	58.7	26.1
Idaho	272	375	434	474	590	405	168	43	508	57.5	25.6
Ill.	2,651	3,776	4,437	5,238	5,052	5,097	791	178	6,004	55.8	22.7
Ind.	1,485	2,046	2,427	2,818	2,978	2,345	608	100	2,936	53.8	23.7
Iowa	1,072	1,325	1,549	1,790	1,979	1,473	468	119	1,727	53.2	25.6
Kans.	853	1,163	1,369	1,548	1,778	1,261	491	101	1,565	53.2	24.3
Ky.	784	1,198	1,500	1,763	2,091	1,592	470	50	1,684	58.6	20.8
La.	707	1,177	1,442	1,742	2,057	1,587	445	45	1,917	55.1	25.4
Maine	276	374	424	510	598	472	117	20	557	55.1	20.7
Md.	685	1,155	1,481	1,872	2,259	1,925	311	47	2,151	54.2	21.7
Mass.	1,280	1,803	2,104	2,575	2,962	2,642	275	69	3,141	54.0	21.7
Mich.	2,433	3,306	3,991	4,569	5,240	4,411	756	270	5,312	54.3	23.2
Minn.	1,169	1,592	1,890	2,207	2,453	1,903	512	122	2,336	55.9	25.4
Miss.	484	723	921	1,117	1,312	955	337	32	1,382	58.2	21.8
Mo.	1,261	1,720	2,085	2,408	2,745	2,088	631	95	2,775	55.1	22.8
Mont.	265	373	429	485	567	354	202	37	444	55.6	22.3
Nebr.	569	734	849	974	1,097	781	300	43	1,007	53.4	25.1
Nev.	77	175	266	355	437	321	108	16	369	55.0	20.2
N.H.	172	267	314	362	462	384	71	21	461	54.7	21.1
N.J.	1,579	2,401	2,980	3,586	4,074	3,644	351	72	4,124	55.4	19.4
N. Mex.	238	426	525	637	726	497	212	31	637	55.7	25.0
N.Y.	3,735	5,067	5,939	6,718	7,319	6,496	715	90	8,450	58.1	18.8
N.C.	1,086	1,720	2,156	2,826	3,445	2,673	685	96	2,919	54.6	25.0
N. Dak.	276	345	396	428	489	301	179	19	347	55.3	25.7
Ohio	2,795	4,087	4,935	5,974	6,679	5,819	797	226	6,141	60.3	19.7
Oklahoma	831	1,184	1,438	1,713	1,984	1,371	583	94	1,631	52.9	23.1
Oreg.	689	919	1,119	1,369	1,606	1,300	276	101	1,513	57.4	21.0
Pa.	3,010	4,287	4,968	5,818	6,675	5,718	891	224	6,532	58.0	21.3
R.I.	251	341	406	488	563	405	62	18	538	55.0	21.1
S.C.	579	879	1,094	1,360	1,601	1,274	301	40	1,564	56.8	19.1
S. Dak.	290	354	398	426	486	321	184	20	424	55.0	26.4
Tenn.	858	1,307	1,655	2,050	2,467	1,981	502	79	2,159	55.3	23.2
Tex.	2,968	4,457	5,610	6,933	7,816	5,842	1,839	245	6,790	54.4	23.1
Utah	247	417	525	664	751	533	200	50	650	52.3	32.8
Vt.	121	152	175	229	275	223	47	10	280	55.0	20.8
Va.	918	1,426	1,800	2,263	2,794	2,275	473	71	2,670	55.6	23.8
Wash.	924	1,377	1,659	2,102	2,371	1,770	552	93	2,008	54.3	22.7
W. Va.	482	601	696	801	911	680	217	56	1,016	58.6	23.6
Wis.	1,201	1,600	1,839	2,181	2,472	2,049	388	84	2,528	55.5	23.9
Wyo.	145	207	225	247	294	182	104	15	217	54.8	26.6

NA. Not available.

¹ Excludes vehicles owned by military services.² Estimated from data reported by States for current and previous years; allowance has been made for deaths, emigration, or revocation by some States.³ Incomplete data for some States.Source: U.S. Federal Highway Administration, *Highway Statistics*, annual; *Drivers Licenses*, annual; and unpublished data.

No. 931. MOTOR VEHICLES—ESTABLISHMENTS, SALES, PAYROLL, AND EMPLOYMENT FOR SELECTED KINDS OF BUSINESS: 1963 AND 1967

KIND OF BUSINESS	ESTABLISHMENTS ^{1,2} (1,000)		SALES OR RE- CEIPTS ^{2,3} (mil. dol.)		ANNUAL PAYROLL ^{2,4} (mil. dol.)		PAID EM- PLOYEES ^{2,5} (1,000)	
	1963	1967	1963	1967	1963	1967	1963	1967
RETAIL TRADE								
Automotive dealers.....	98.5	105.5	45,376	55,631	4,111	5,257	794.2	905.6
Motor vehicle dealers—new and used cars.....	33.3	{ 62.0	{ 37,375	{ 48,636	{ 3,326	{ 4,232	612.1	696.3
Motor vehicle dealers—used cars only.....	28.0	{ 3,087	{ 3,379	{ 4,236	{ 184	{ 185	44.3	38.6
Tire, battery, and accessory dealers.....	25.9	29.2	2,336	4,236	474	604	110.5	129.6
Misc. automotive dealers.....	11.3	14.3	1,579	2,760	127	236	27.2	42.2
Gasoline service stations.....	211.5	216.1	17,760	22,709	1,510	1,898	519.8	575.2
WHOLESALE TRADE								
Motor vehicles and auto equipment.....	29.4	31.2	36,789	46,122	1,671	2,127	295.7	341.1
Automobiles and other motor vehicles.....	4.6	4.8	25,958	31,330	507	641	79.9	91.9
Automotive equipment.....	22.7	23.3	8,844	11,614	1,019	1,261	191.2	214.1
Tires and tubes.....	2.2	3.1	2,187	3,178	146	225	24.6	35.1
SERVICES								
Auto repairs, services, and garages	139.6	139.2	5,444	6,7028	1,135	1,468	288.0	316.2
Automobile repair shops.....	114.5	109.9	3,588	4,086	778	943	184.4	187.9
Automobile parking.....	11.3	10.6	416	484	114	129	34.9	33.5
Car, truck rental and leasing; other serv.....	13.9	18.7	1,440	2,489	242	396	68.7	95.0
MANUFACTURING								
Motor vehicles and equipment.....	2.8	2.7	12,781	13,666	5,194	5,930	693.8	739.4
Motor vehicles.....	2.0	{ 0.2	{ 12,346	{ 7,354	{ 4,947	{ 2,700	{ 649.9	{ 321.2
Motor vehicle parts and accessories.....		{ 1.7	{ 5,712	{ 332	{ 2,891	{ 182	{ 364.9	{ 364.9
Truck and bus bodies.....	0.6	0.6	230	332	133	182	24.5	30.4
Truck trailers.....	0.2	0.2	206	269	113	147	19.4	22.9

¹ As of Dec. 31; represents all establishments, except for wholesale trade and manufacturing, which represent only establishments employing one or more workers at any time during the year.

² Preliminary data for 1972 are as follows: Establishments 3,3; sales or receipts 22,213; annual payroll 9,458; and paid employees 807.9.

³ For manufacturing, data represent value added in manufacture.

⁴ Comprises salaries, wages, commissions, bonuses, vacation pay, and other remuneration. ⁵ Workweek ended nearest Nov. 15, 1963, and week including Mar. 12, 1967, except quarterly average for manufacturing.

⁶ Data corrected only at level significantly affected; therefore, breakdown will not add to total.

Source: U.S. Bureau of the Census, *Census of Business: 1967*, vols. II, VI, and VIII; and *Census of Manufactures: 1967*, vol. I.

No. 932. AUTOMOBILE OWNERSHIP, AGE, AND FINANCING: 1950 TO 1971

[Excludes Alaska and Hawaii. For definition of family unit, see headnote, table 648]

ITEM	1950	1955	1960	1965	1968	1969	1970	1971
Total number of family units in U.S. ¹ millions	45.2	49.1	53.4	58.4	61.2	62.1	63.7	65.1
Family units owning automobiles..... percent	59	70	77	79	79	79	82	83
Owning 1 automobile..... percent	52	60	62	55	53	52	54	55
Owning 2 or more automobiles..... percent	7	10	15	24	26	27	28	28
Automobiles owned, by age: ²								
Less than 2 years old..... percent	17	12	14	16	14	15	16	11
2 and 3 years old..... percent	19	22	20	21	24	22	21	25
4-7 years old..... percent	6	43	41	33	36	41	42	40
8 years old and over..... percent	58	23	25	30	26	22	21	24
Total automobiles purchased ³ millions	13.6	14.1	18.3	19.2	20.5	19.8	18.3	
New cars..... millions	4.4	5.2	7.2	6.9	7.5	8.3	5.9	
Average price paid..... dollars	(NA)	2,730	3,140	3,140	3,290	3,510	3,600	43,690
Used cars..... millions	9.2	9.1	11.1	12.3	13.0	11.5	12.4	
Average price paid, gross..... dollars	750	980	920	1,050	1,000	1,170	4,1273	
Method of financing purchases:								
All passenger cars ⁴ percent	100	100	100	100	100	100	100	100
Full cash (including trade-in allowance)..... percent	47	38	38	48	42	47	47	50
Installment credit and other borrowing..... percent	52	60	62	52	58	53	53	50
New passenger-car buyers ⁵ percent	100	100	100	100	100	100	100	100
Full cash (including trade-in allowance)..... percent	64	39	33	40	31	34	34	43
Installment credit and other borrowing..... percent	46	60	67	60	69	66	66	57
Used passenger cars ⁵ percent	100	100	100	100	100	100	100	100
Full cash (including trade-in allowance)..... percent	41	37	41	53	50	51	52	50
Installment credit and other borrowing..... percent	57	60	59	47	50	49	48	

NA Not available. ¹ At time of survey, early in year indicated.

² Age is determined by subtracting model year from year of survey. ³ Covers family units buying cars during preceding calendar year and still owning them at time of survey (January–February of year indicated).

⁴ Data may be unreliable due to an unusually small sample.

⁵ Refers to purchases during preceding year. Includes cars received as gifts, whether cash or credit purchased. Buyers for whom method of financing was not ascertained are excluded from the detail on purchases.

Source: The University of Michigan, Survey Research Center, Ann Arbor, Mich., *Survey of Consumer Finances*.

No. 933. NEW PASSENGER CAR PRODUCTION AND IMPORTS: 1963 TO 1973

ITEM	1963	1965	1966	1967	1968	1969	1970	1971	1972	1973
Value of production:										
Gross auto product ¹	bil. dol.	25	32	30	20	36	37	31	41	44
Gross national product ²	bil. dol.	591	685	750	794	864	930	978	1,056	1,155
Gross auto product as percent of GNP.....		4.3	4.6	4.0	3.6	4.2	3.9	3.2	3.9	3.8
Production and imports:										
Total.....	Million units	8.1	9.9	9.5	8.4	10.5	10.1	8.6	11.2	11.3
Domestic production.....	Million units	7.6	9.3	8.6	7.4	8.8	8.2	6.6	8.6	8.8
Imports.....	Million units	.4	.6	.9	1.0	1.6	1.8	2.0	2.6	2.5
Percent of total.....		5.1	5.6	9.6	12.1	15.5	18.3	23.5	23.2	22.0

¹ Value of domestically produced cars plus net value added by distribution of new, used, and imported cars.² For definition, see text, p. 371.

Source: U.S. Bureau of the Census and U.S. Bureau of Economic Analysis, unpublished data.

No. 934. AUTOMOBILES—FACTORY INSTALLED EQUIPMENT: 1960 TO 1973

[Refers to model-year production. For certain items, such as air conditioning, a significant number of units are installed on new vehicles after they leave the factory]

EQUIPMENT	UNITS INSTALLED (1,000)					PERCENT OF CARS PRODUCED				
	1960	1965	1970	1972	1973	1960	1965	1970	1972	1973
Automatic transmission.....	4,306	7,134	7,213	8,222	9,604	71.6	80.7	91.0	91.9	93.3
Manual transmission.....	1,706	1,709	709	725	681	28.4	19.3	8.9	8.1	6.6
V-8 engine.....	3,409	6,492	6,674	7,146	8,392	56.7	73.4	84.2	79.9	81.5
6-cylinder engine.....	2,603	2,350	1,247	952	1,011	43.3	26.6	15.7	10.7	9.8
4-cylinder engine.....	(NA)	(NA)	(NA)	(NA)	887	(NA)	(NA)	(NA)	(NA)	8.6
Power brakes.....	1,948	2,858	4,437	6,025	7,769	32.4	32.3	56.0	67.4	75.5
Power steering.....	2,357	5,270	6,433	7,541	9,021	39.2	59.6	81.2	84.3	87.7
Power windows ¹	376	1,261	1,319	2,058	2,277	6.3	14.3	16.7	23.0	22.1
Air conditioning.....	414	2,061	4,825	6,138	7,528	6.9	23.3	60.9	68.6	73.2
Tinted glass ²	1,668	4,572	5,507	6,695	8,092	27.7	51.7	69.5	74.8	78.6

¹ NA Not available.² Includes station wagon power rear windows.² Covers windshield and other glass.Source: Chilton Company, Radnor, Pa., *Annual Statistical Issue, Automotive Industries*. (Copyright.)No. 935. ESTIMATED COST OF OPERATING AN AUTOMOBILE: 1960, 1970, AND 1974
[1974 estimates based on a 4-door sedan, costing \$4,251, with an assumed life-span of 10 years, 100,000 miles. Similar specifications used in 1960 and 1970]

ITEM	10 YEAR TOTAL COSTS			CENTS PER MILE COST, 1974 (January)							
	1960 (Oct.)	1970 (Jan.)	1974 (Jan.)	10- year aver- age	1st year (14,500 miles)	3d year (11,500 miles)	5th year (9,900 miles)	7th year (9,500 miles)	10th year (5,700 miles)		
				\$9,761	\$11,890	\$15,892	15.89	16.74	15.91	15.08	17.41	15.79
Total.....											
Costs excluding taxes.....	8,595	10,537	14,383	14.38	14.34	14.62	13.73	16.04	14.21		
Depreciation.....	2,542	3,185	4,201	4.20	7.21	4.78	2.97	2.65	4.31		
Repairs and maintenance ¹	1,722	1,521	2,940	2.94	.85	2.00	3.30	6.00	.62		
Replacement tires and tubes ²	181	385	386	.38	.13	.25	.43	.57	.01		
Accessories ³	140	28	57	.06	.02	.03	.03	.03	.11		
Gasoline ⁴	1,453	1,733	3,026	3.03	8.03	3.03	3.03	3.03	3.03		
Oil ⁴	187	158	195	.19	.14	.17	.21	.24	.21		
Insurance ⁵	1,290	1,722	1,618	1.62	1.41	1.67	1.79	1.42	2.37		
Garaging, parking, tolls, etc. ⁶	1,080	1,805	1,960	1.96	1.55	1.79	1.97	2.03	2.96		
Taxes and fees ⁷	1,166	1,353	1,507	1.51	2.40	1.29	1.35	1.37	1.58		

¹ For 1974, includes lubrications, repacking wheel bearings, flushing cooling system, and aiming headlamps; replacement of minor parts such as spark plugs, fan belts, radiator hoses, distributor cap, fuel filter, and pollution control filters; minor repairs such as brake jobs, water pump, carburetor overhaul and universal joints; and major repairs such as a complete "valve job."² For 1974, covers 7 new regular tires and 4 new snow tires during life of car.³ For 1974, includes a set of vinyl floor mats and seat covers. ⁴ For 1974, gasoline use set at 12.92 miles per gallon; associated oil use at 1 gallon oil to 159 gallons gas.⁵ For 1974, includes \$50,000 combined public liability (\$15,000/\$30,000 bodily injury, and \$5,000 property damage), \$2,500 personal injury protection, uninsured motorist coverage, and full comprehensive coverage for the 10-year period; \$100 deductible collision insurance was assumed for the first 5 years.⁶ For 1974, includes monthly charges of \$11 for garage rental or cost of owner's garaging facility, parking fee average of \$57 per year, and toll average of \$7.00 per year. ⁷ For 1974, includes Federal excise taxes on tires of 10 cents per pound, lubricating oil of 6 cents per gallon, and gasoline of 4 cents per gallon; plus the Maryland tax on gasoline of 9 cents per gallon, titling tax of 4 percent of retail price, and registration fee of \$20.00 for 3,700 pounds or less shipping weight, or \$30.00 for vehicles over 3,700 pounds.Source: U.S. Federal Highway Administration, *Cost of Operating an Automobile*.

Expenditures—Cars and Trucks—Motor Fuel

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No. 936. HOUSEHOLD EXPENDITURES ON NEW AND USED CARS: 1968 TO 1973

[Seasonally adjusted. Annual figures are averages of quarterly rates, except purchases per 100 households. Expenditures and prices are net of trade-in allowances and State and Federal taxes. Based on sample]

YEAR AND QUARTER	PURCHASES PER 100 HOUSEHOLDS		EXPENDITURES, ANNUAL RATE (bil. dol.)			AVERAGE PRICE (dollars)	
	New cars	Used cars	Total	New cars	Used cars	New car	Used car
1968.....	13.2	22.2	35.1	23.2	11.9	2,912	888
1969.....	13.0	20.8	36.4	24.4	12.0	3,031	941
1970.....	11.1	19.6	33.3	21.3	12.0	3,018	959
1971.....	12.4	22.4	41.7	26.9	14.8	3,308	1,021
1972.....	12.8	22.5	44.8	28.8	16.0	3,380	1,066
1973, Jan.-Mar.....	13.9	24.9	52.6	32.4	20.2	3,426	1,190

Source: U.S. Bureau of the Census, *Current Population Reports*, series P-65, Nos. 39, 45, and 46.

No. 937. CARS AND TRUCKS IN USE, BY AGE: 1955 TO 1973

[As of July 1. Prior to 1960, excludes Alaska and Hawaii. Excludes vehicles for which age was not known]

AGE	1955		1960		1965		1970		1973	
	Number (1,000)	Per- cent								
Total cars.....	47,123	100.0	56,935	100.0	68,935	100.0	80,427	100.0	89,781	100.0
Under 3 years.....	14,448	30.7	14,186	24.9	21,578	31.3	24,403	30.3	26,861	30.0
3-5 years.....	15,164	32.2	18,346	32.2	18,013	26.1	24,923	31.0	25,783	28.7
6-8 years.....	10,146	21.5	12,380	21.7	13,571	19.7	18,441	22.9	21,169	23.6
9-11 years.....	7,365	15.6	9,199	16.2	9,862	14.3	7,735	9.6	11,181	12.4
12 years and over.....			2,825	5.0	5,911	8.6	4,925	6.1	4,887	5.4
Total trucks.....	9,111	100.0	10,771	100.0	13,106	100.0	17,672	100.0	21,397	100.0
Under 3 years.....	2,039	22.4	2,046	19.0	3,222	24.6	4,680	26.5	6,021	28.1
3-5 years.....	2,767	30.4	2,418	22.4	2,476	18.9	4,250	24.1	4,979	23.3
6-8 years.....	2,319	25.5	2,077	19.3	1,950	14.9	2,955	16.7	3,907	18.3
9-11 years.....	702	7.7	2,332	21.7	1,844	14.1	1,862	10.5	2,486	11.6
12 years and over.....	1,285	14.1	1,898	17.6	3,614	27.6	3,925	22.2	4,004	18.7

Source: R. L. Polk & Co., Detroit, Mich. Further reproduction prohibited without Polk permission.

No. 938. MOTOR FUEL CONSUMPTION, BY USE: 1950 TO 1972

[In millions of gallons, except averages. Prior to 1960, excludes Alaska and Hawaii. Comprises all fuels under State motor fuel laws. Excludes exports and Federal purchases for military use. See *Historical Statistics, Colonial Times to 1957*, series Q 318-320, for highway and nonhighway usage]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
Total consumption ¹	40,280	53,116	63,714	71,104	88,122	92,328	97,547	105,061
Passenger vehicles.....	25,037	34,310	41,906	51,160	63,305	66,728	70,461	74,344
Passenger cars ²	24,305	33,548	41,169	50,275	62,448	65,734	69,514	73,463
Buses ³	732	771	827	894	947	944	947	881
Trucks and combinations.....	10,566	13,308	15,882	19,935	24,727	25,660	27,086	30,718
Average gallons consumed per vehicle.....	728	759	777	775	821	830	838	859
Passenger cars ²	603	644	661	656	700	722	728	730
Buses ³	3,752	3,021	3,040	2,844	2,800	2,491	2,382	2,185
Trucks and combinations.....	1,257	1,278	1,330	1,347	1,384	1,365	1,368	1,446
Average mileage per gallon, per vehicle.....	12.87	12.67	12.42	12.49	12.15	12.14	12.16	12.07
Passenger cars ²	14.05	14.53	14.28	14.15	13.75	13.58	13.73	13.67
Buses ³	5.57	5.85	5.26	5.35	5.32	5.34	5.38	5.80
Trucks and combinations.....	8.57	8.37	7.96	8.60	8.36	8.39	8.38	8.59

¹ Through 1960, includes nonhighway usage and losses allowed for evaporation, handling, etc.; thereafter, highway usage only. ² Includes taxicabs and motorcycles. ³ Includes school buses.

Source: U.S. Federal Highway Administration, *Highway Statistics*, annual.

No. 939. SPEED OF MOTOR VEHICLES: 1950 TO 1972

[Excludes Alaska and Hawaii. Based on actual speed of each vehicle recorded on tangent sections of main rural highways during off-peak hours]

ITEM	1950	1955	1960	1965	1968	1969	1970	1971	1972	
Number of vehicles recorded.....	1,000	280	305	459	552	480	388	488	430	414
Average speed, all vehicles.....	m.p.h.	47.6	50.5	52.6	56.4	50.0	60.0	59.2	60.6	60.3
Passenger cars.....	m.p.h.	48.7	52.0	58.8	57.8	60.4	61.3	60.6	62.0	61.6
Trucks.....	m.p.h.	43.0	45.6	48.2	51.8	54.0	54.9	54.7	56.1	56.2
Buses.....	m.p.h.	40.8	52.3	55.5	57.4	60.5	59.4	58.8	60.2	60.3
Vehicles exceeding—										
40 m.p.h.....	percent	77	87	92	95	97	98	97	98	98
45 m.p.h.....	percent	58	72	80	88	92	93	93	95	94
50 m.p.h.....	percent	37	50	58	73	81	82	83	86	85
55 m.p.h.....	percent	20	29	37	56	66	67	68	71	70
60 m.p.h.....	percent	8	14	16	34	45	46	47	50	50
65 m.p.h.....	percent	(NA)	(NA)	(NA)	(NA)	26	27	27	30	30
70 m.p.h.....	percent	(NA)	(NA)	(NA)	(NA)	12	13	12	14	14

NA. Not available.

Source: U.S. Federal Highway Administration, *Traffic Speed Trends*, and unpublished data.

No. 940. AUTOMOBILE INSURANCE: 1950 TO 1973

[Money figures in millions of dollars. Prior to 1960, excludes Alaska and Hawaii. 1950, net basis; 1955, direct writing basis; 1960 and 1965, direct premiums earned and direct losses incurred; 1969, premiums written basis; 1970-1973, premiums earned basis]

ITEM	1950	1955	1960	1965	1970	1972	1973	
							Private passenger	Commercial
Number of companies reporting.....	(NA)	(NA)	(NA)	(NA)	925	1,035	1,048	
Total insurance:								
Premiums written.....	2,625	4,644	6,448	8,358	14,612	17,739	15,363	8,207
Losses paid ¹	1,069	2,122	3,645	5,221	11,198	12,237	11,067	2,361
Percent of premiums written.....	40.7	45.7	56.5	62.5	76.6	60.0	72.0	73.6
Automobile liability, bodily injury:								
Premiums written.....	931	1,735	2,841	3,948	6,723	11,304	9,582	2,193
Losses paid ¹	396	820	1,087	2,459	5,256	8,255	7,095	1,710
Percent of premiums written.....	42.5	47.3	59.7	62.3	78.2	72.5	74.0	78.4
Automobile liability, property damage: ³								
Premiums written.....	482	896	1,219	1,567	2,836	(2)	(2)	(2)
Losses paid ¹	231	415	675	1,025	2,291	(2)	(2)	(2)
Percent of premiums written.....	47.9	46.3	55.4	65.4	80.8	(2)	(2)	(2)
Physical damage: ⁴								
Premiums written.....	1,212	2,013	2,388	2,843	5,053	6,345	5,781	1,014
Losses paid ¹	442	887	1,273	1,737	3,661	3,982	3,972	642
Percent of premiums written.....	36.5	43.6	53.3	61.1	72.3	62.8	68.7	63.3

NA. Not available.

¹ Beginning 1970, includes adjusting expenses. ² Property damage included with bodily injury.

³ Covers real property against damage by autos. ⁴ Covers auto fire, theft, collision, and comprehensive.

Source: The Spectator, Philadelphia, Pa., 1950, *Insurance Yearbook*; 1955 through 1965, *Insurance by States*. Beginning 1970, The National Underwriter Co., Cincinnati, Ohio, *Argus F.C. & S. Chart*, annual, (copyright).

No. 941. TRAFFIC ACCIDENTS, INJURIES, DEATHS, AND ECONOMIC LOSS: 1930 TO 1973

[In thousands, except as indicated. Estimates based on official reports from a representative cross-section of States. Includes all motor vehicle accidents regardless of place of occurrence and all injuries regardless of length of disability]

ITEM	1930	1940	1950	1960	1965	1970	1971	1972	1973
Accidents, total.....	9,850	10,339	10,418	11,420	14,733	22,116	22,650	24,850	26,619
Injuries, total.....	1,373	1,440	1,799	3,078	3,982	4,983	4,994	5,190	5,192
Deaths, total.....	32.9	34.5	34.8	38.1	49.2	51.8	54.7	56.3	55.8
To riders or passengers of motorcycles.....	(NA)	(NA)	1.0	.8	1.6	2.3	2.7	3.0	3.4
Economic loss ²	1,830	1,920	3,720	7,600	11,153	16,207	16,870	19,066	(NA)

NA. Not available.

¹ Includes motor scooters and motorized bicycles. ² Wage loss, medical expense, insurance administrative costs, and property damage.

Source: Insurance Information Institute, New York, N.Y., *Traffic Accident Experience in the United States*, March 1973. Data on motorcycles from the National Safety Council. Data on motorcycle deaths from Department of Transportation, National Highway Traffic Safety Administration.

Motor Vehicle Accidents

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No. 942. MOTOR-VEHICLE ACCIDENTS—PERSONS KILLED OR INJURED: 1960 TO 1972

[Estimates based on summaries of motor vehicle accidents prepared by various States]

ITEM	PERSONS KILLED					PERSONS INJURED ¹					
	1960	1965	1970	1971	1972	1960	1965	1970	1971	1972	
	Number of persons....1,000...	38	49	55	54	56	3,078	4,100	5,100	4,700	4,850
Driver action.....1,000.....	30	42	45	46	(NA)	2,600	3,682	4,513	4,136	(NA)	
Pedestrian action.....1,000.....	8	9	10	10	10	256	275	301	319	277	
Percent distribution.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Driver action:											
Exceeding speed limit.....	36.1	41.1	39.3	36.1	(NA)	38.5	42.2	21.9	22.7	(NA)	
On wrong side of road.....	17.0	16.4	13.8	14.1	(NA)	6.7	6.8	0.3	5.1	(NA)	
Had not right-of-way.....	12.8	13.0	14.0	14.6	(NA)	22.5	18.9	15.7	19.9	(NA)	
Drove off roadway.....	16.6	10.5	14.5	15.6	(NA)	8.3	6.9	11.2	10.9	(NA)	
Reckless driving.....	12.5	14.9	14.3	12.6	(NA)	13.5	19.2	37.0	36.2	(NA)	
Other ²	5.0	4.1	4.1	7.0	(NA)	10.5	6.0	4.9	5.2	(NA)	
Pedestrian action:											
Crossing at intersection.....	29.2	20.8	22.4	21.1	20.0	32.7	26.2	31.4	31.2	29.7	
Crossing between intersections.....	37.1	40.8	41.8	42.9	37.6	32.2	31.6	26.4	26.9	24.3	
Children playing in street.....	5.3	3.3	3.1	2.2	3.0	6.6	6.8	5.5	5.1	5.3	
At work in road.....	2.9	2.8	2.0	2.2	2.5	2.2	1.8	2.0	2.0	2.2	
Coming from behind parked car.....	6.2	6.9	3.1	3.3	2.8	15.7	16.8	9.3	8.7	10.3	
Walking on rural highway.....	10.0	15.6	14.3	14.3	18.9	7.6	7.6	12.1	8.8	10.2	
Not on roadway.....	4.2	4.7	4.1	4.1	6.3	4.5	3.6	4.4	4.7	4.8	
Other ³	5.1	6.1	9.2	9.9	8.0	3.7	6.1	8.9	12.6	13.2	
Collision with—											
Automobile.....	39.5	41.2	40.6	39.6	40.2	74.9	72.5	73.2	72.7	71.4	
Pedestrian.....	20.0	18.6	17.8	18.2	17.8	8.3	6.7	5.9	6.8	5.7	
Fixed object.....	10.7	10.5	10.1	9.9	11.8	4.8	5.1	5.7	5.8	7.7	
Other ⁴	4.8	4.5	3.8	4.0	4.2	2.1	2.4	1.9	2.2	2.7	
Noncollision.....	25.0	26.2	27.7	28.3	26.0	9.9	13.3	13.3	12.5	12.5	
Weather condition:											
Clear.....	87.4	84.8	84.1	83.3	83.3	83.9	78.6	80.7	80.1	80.5	
Fog.....	1.2	2.0	2.0	3.7	2.3	0.7	1.5	1.4	1.6	1.4	
Rain.....	9.0	11.0	12.1	11.1	12.4	10.6	15.4	14.2	13.3	14.3	
Snow.....	2.4	2.2	1.8	1.9	2.0	4.8	4.5	3.7	5.0	3.8	
Road condition:											
Dry.....	79.2	77.4	78.8	75.9	77.0	71.5	69.1	71.7	68.0	70.2	
Wet.....	15.1	17.9	17.2	18.5	18.3	16.5	22.4	20.4	22.2	21.2	
Snowy or icy.....	5.7	4.7	4.0	5.6	4.7	12.0	8.5	7.9	9.8	8.6	
Day of accident:											
Sunday.....	17.7	18.7	17.6	17.2	16.3	15.2	13.6	13.7	13.2	12.6	
Monday.....	11.6	10.9	11.4	11.5	11.7	13.5	13.2	13.2	13.0	13.4	
Tuesday.....	11.6	10.0	10.5	10.7	10.2	12.2	11.0	12.2	12.6	12.6	
Wednesday.....	10.5	11.2	11.2	10.9	11.0	12.1	12.0	13.4	12.8	12.9	
Thursday.....	11.2	11.9	12.2	12.6	12.0	13.5	13.9	13.2	13.9	13.9	
Friday.....	16.0	15.4	16.3	16.5	17.1	16.0	16.5	16.6	17.1	17.6	
Saturday.....	21.5	21.0	20.8	20.6	21.7	17.5	18.0	17.7	17.4	17.0	
Hour of accident:											
Midnight-6 a.m.....	22.3	22.2	21.6	21.5	21.4	10.9	10.7	11.8	11.1	10.5	
6 a.m.-noon.....	15.6	14.8	15.6	15.7	15.1	22.0	21.8	20.7	20.8	21.6	
Noon-6 p.m.....	27.8	28.7	28.4	28.5	28.1	40.5	39.7	40.0	40.7	41.1	
6 p.m.-midnight.....	34.3	34.3	34.4	34.3	35.4	26.6	27.8	27.5	27.4	26.3	
Age of victims:											
Under 10 years.....	(NA)	7.6	(NA)	6.9	7.2	(NA)	8.9	(NA)	8.3	7.8	
10-19 years.....	(NA)	15.9	(NA)	18.9	19.0	(NA)	21.4	(NA)	22.3	23.8	
20-34 years.....	(NA)	28.4	(NA)	29.6	31.9	(NA)	31.6	(NA)	35.0	36.4	
35-54 years.....	(NA)	24.3	(NA)	21.7	19.6	(NA)	25.7	(NA)	22.5	20.9	
55 years and over.....	(NA)	23.8	(NA)	22.9	21.4	(NA)	12.4	(NA)	11.9	11.1	

N.A. Not available.

¹ Includes persons injured attributable to action of both parties and those for whom action could not be determined.² Cutting in, improper passing, no or improper signalling, movement of driverless car, miscellaneous.³ Standing on safety isle, getting on or off other vehicle, riding or hitching on vehicle, miscellaneous.⁴ Railroad train, bicycle, other vehicle, miscellaneous.Source: The Travelers Insurance Companies, Hartford, Conn., *The Travelers Book of Street and Highway Accident Data*, annual.

NO. 943. AUTOMOBILE ACCIDENT VICTIMS—ECONOMIC LOSSES, BY TYPE: 1967

(In dollars, except as indicated. Excludes Alaska and Hawaii. Seriously injured persons defined as those meeting any of following conditions: Hospitalized 2 weeks or more; \$500 or more in medical costs other than hospital; if working, missed 3 weeks of work; if not working, missed 6 weeks of normal activities. Based on a sample of police reported injuries and fatalities due to automobile accidents)

TYPE OF LOSS	PER SERIOUSLY INJURED PERSON			PER FAMILY WITH SERIOUSLY INJURED MEMBER OR FATALITY				
	Average total loss	Loss for those sustaining loss		Percent with loss	Average total loss	Loss for those sustaining loss		Percent with loss
		Average	Median ¹			Average	Median ¹	
Total	8,290	8,290	2,544	100.0	10,390	10,395	2,805	100.0
To date of interview								
Medical	4,203	4,203	(NA)	100.0	4,233	4,235	(NA)	(NA)
Hospital	1,604	1,610	802	99.6	1,562	1,564	918	94.4
Other	813	1,213	729	67.0	812	1,221	716	66.5
Property damage	555	873	710	61.2	574	967	782	59.4
Wage loss	1,951	2,838	948	68.8	1,839	2,854	950	64.4
Other losses	113	306	207	36.8	258	590	385	43.7

NA Not available.

¹ For definition of median, see preface.

Source: U.S. Dept. of Transportation, *Economic Consequences of Automobile Accident Injuries*, vol. I, April 1970. (Automobile Insurance and Compensation Study.)

NO. 944. MOTOR-VEHICLE ACCIDENTS—NUMBER AND DEATHS, BY TYPE OF ACCIDENT: 1950 TO 1973

ITEM	1950	1955	1960	1965	1969	1970	1971	1972	1973 (prel.)
Motor-vehicle accidents...1,000	8,300	9,900	10,400	13,200	15,500	16,000	16,400	17,000	17,000
Accidents per 10,000 vehicles.....	1,058	1,577	1,397	1,439	1,443	1,435	1,413	1,400	1,330
Traffic deaths ¹ :	34,763	38,426	38,137	49,163	56,000	54,800	54,700	56,600	55,600
Noncollision accidents.....	10,600	12,100	11,900	14,000	2 ² 15,600	2 ² 14,200	2 ² 13,700	14,400	13,900
Collision accidents:									
With other motor vehicles....	11,650	14,500	14,800	20,800	23,800	23,300	23,300	24,200	24,500
With pedestrians.....	9,000	8,200	7,850	8,900	9,900	10,400	10,600	10,700	10,600
With fixed objects.....	3,490	3,605	3,610	4,560	2 ² 6,700	2 ² 6,900	7,100	7,300	6,500
Traffic death rates:									
Per 100,000 population.....	23.0	23.4	21.	25.4	27.7	26.9	26.5	27.2	26.5
Per 10,000 motor vehicles.....	7.1	6.1	5.1	5.4	5.2	4.9	4.8	4.7	4.3
Per 100 million vehicle miles.....	7.6	6.3	5.3	5.5	5.2	4.9	4.7	4.5	4.2

¹ Totals may not quite equal sums of various types because the estimates are generally made only to nearest 10 deaths, and to nearest 50 deaths for certain types. ² Not comparable with earlier years.

Source: National Safety Council, Chicago, Ill., *Accident Facts*, annual. (Copyright.)

NO. 945. DEATHS FROM MOTOR-VEHICLE ACCIDENTS—PLACE OF DEATH, BY STATES: 1950 TO 1970

STATE	1950	1955	1960	1965	1970	STATE	1950	1955	1960	1965	1970
U.S.	34,859	38,521	38,137	49,163	54,845	Mo.	902	1,079	1,078	1,387	1,470
Ala.	859	859	926	1,248	1,297	Mont.	209	244	231	289	340
Alaska....	22	31	43	57	107	Nebr.	317	331	310	411	435
Ariz.	338	384	507	555	782	Nev.	122	186	182	215	278
Ark.	365	447	449	635	595	N.H.	103	110	103	148	182
Calif.	3,082	3,524	3,837	4,804	5,114	N.J.	715	815	764	1,104	1,289
Colo.	415	455	443	557	697	N. Mex.	340	383	427	517	568
Conn.	287	353	303	415	448	N.Y.	1,061	2,163	2,034	2,798	3,117
Del.	84	112	91	126	158	N.C.	1,153	1,222	1,281	1,723	1,801
D.C.	102	99	82	99	140	N. Dak.	105	153	166	176	194
Fla.	882	1,048	1,303	1,702	2,181	Ohio.	1,850	2,089	1,933	2,333	2,488
Ga.	928	1,122	1,079	1,408	1,825	Oklahoma.	504	569	686	730	787
Hawaii....	74	64	111	110	163	Oreg.	461	434	469	717	730
Idaho.	243	184	231	262	320	Pa.	1,656	1,872	1,685	2,167	2,349
Ill.	1,953	1,877	1,564	2,197	2,267	R.I.	87	94	60	102	143
Ind.	1,136	1,189	1,164	1,550	1,587	S.C.	627	696	690	847	1,070
Iowa.	620	613	644	831	946	S. Dak.	198	200	241	252	240
Kansas....	546	613	535	684	684	Tenn.	801	968	889	1,265	1,525
Ky.	753	907	808	943	1,081	Tex.	2,499	2,602	2,316	3,067	3,570
La.	585	703	849	1,122	1,194	Utah.	198	211	269	314	354
Maine....	161	177	181	227	288	Vt.	69	87	104	136	116
Md.	480	500	527	710	809	Wash.	929	909	782	1,072	1,251
Mass.	492	621	621	888	918	Wash. D. C.	534	514	597	768	902
Mich.	1,627	2,036	1,634	2,134	2,172	W. Va.	400	398	371	507	561
Minn.	558	613	750	897	1,028	Wis.	857	954	926	1,055	1,109
Miss.	525	562	669	723	947	Wyo.	149	145	182	184	210

Source: U.S. Public Health Service, *Vital Statistics of the United States*, annual.

Transportation To Work—Intercity Motor Carriers

565

NO. 946. MEANS OF TRANSPORTATION TO WORK, BY RESIDENCE: 1970
 [In thousands of workers 16 years old and over, except percent. Based on a 15 percent sample]

MEANS OF TRANSPORTATION	Total population	Urban	Rural	WORKERS LIVING IN SMSA'S OF 250,000+				Working outside SMSA of residence
				Total ¹	Living and working in same SMSA		Working outside SMSA of residence	
					Total	Working—		
						In central cities	Outside central cities	
Total	193,561	140,595	52,966	47,222	40,816	23,045	17,771	2,141
Private automobile	59,723	44,835	14,888	36,184	31,422	16,436	14,986	1,786
Driver	50,698	38,133	12,565	31,023	26,062	13,998	12,964	1,560
Percent of total private	84.9	85.1	84.4	85.7	85.5	85.2	86.5	87.3
Passenger	9,025	6,702	2,322	5,161	4,460	2,438	2,022	226
Bus or streetcar	4,245	4,116	129	3,847	3,244	2,076	568	119
Subway or elevated train	1,768	1,762	6	1,747	1,489	1,455	34	31
Walked to work	5,690	4,508	1,183	2,979	2,502	1,390	1,202	56
Worked at home	2,685	1,082	1,604	989	878	342	536	13
Other means ²	2,742	1,927	815	1,474	1,191	745	446	137

¹ Includes those persons for whom place of work was not reported. ² Includes railroad and taxicab.

Source: U.S. Bureau of the Census, *U. S. Census of Population: 1970, General Social and Economic Characteristics*, final report, PC(1)-C1, *United States Summary*, and *Journey to Work*, PC(2)-6D, Subject Reports.

NO. 947. CLASS I INTERCITY MOTOR CARRIERS OF PASSENGERS: 1950 TO 1972
 [Carriers subject to ICC regulations. Prior to 1960, excludes Alaska and Hawaii. See text, p. 516, for class limits]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
Carriers reporting ¹	number	172	146	143	156	70	71	71
Operating revenue	mil. dol.	351	382	463	607	677	722	758
Passenger revenue ²	mil. dol.	325	315	382	467	496	524	553
Special bus revenue and other	mil. dol.	27	47	81	141	181	198	205
Expenses	mil. dol.	315	331	405	514	594	639	664
As percent of operating revenue		89.7	91.4	87.5	84.7	87.7	88.5	87.6
Net operating revenue	mil. dol.	36	31	58	90	83	83	94
Ordinary income before income taxes	mil. dol.	35	20	55	90	98	88	103
Net income after income taxes	mil. dol.	19	16	28	52	56	52	65
Passenger vehicles in service ²	number	14,568	13,127	12,680	13,287	12,992	13,282	12,896
Owned end of year ²	number	13,200	11,547	10,946	11,295	10,068	10,158	9,900
Intercity	number	13,621	12,057	11,142	10,106	9,084	9,249	9,042
Vehicle-miles, passenger ³	mil.	959	859	843	947	869	871	856
Number of revenue passengers carried	mil.	390	293	208	219	178	174	167
Miles per vehicle, average ⁴		55,411	64,128	65,567	67,689	61,616	60,396	58,565
Average fare per passenger, per carrier (intercity)	\$1.01	\$1.37	\$2.12	\$2.73	\$3.55	\$3.81	\$4.19	\$4.24
Passenger revenue per vehicle-mile, regular-route	\$0.36	\$0.38	\$0.49	\$0.56	\$0.65	\$0.69	\$0.74	\$0.76
Expense per vehicle-mile	\$0.33	\$0.38	\$0.48	\$0.56	\$0.68	\$0.73	\$0.78	\$0.82
Number of employees, average	1,000	40	36	35	35	34	34	34
Compensation of employees	mil. dol.	130	159	190	250	293	317	334

¹ Excludes carriers subject to ICC jurisdiction engaged preponderantly in local or suburban service and carriers engaged in transportation of both property and passengers. ² Regular route intercity and local. ³ Vehicles owned, leased, and operated under "purchase transportation" arrangements, operated in all revenue service.

⁴ Owned and leased vehicles, intercity service.

Source: U.S. Interstate Commerce Commission, *Transport Statistics in the United States*, Part 7, annual.

NO. 948. INTERCITY BUS LINES—SUMMARY OF OPERATIONS: 1960 TO 1973

ITEM	1960	1965	1969	1970	1971	1972	1973 (est.)
Operating companies	1,150	1,100	1,050	1,000	1,000	1,000	1,000
Buses	20,974	20,600	22,700	23,100	23,000	22,500	22,300
Miles of highway served (Dec. 31) ¹	1,000	265	266	267	267	270	271
Employees (Dec. 31) ²	1,000	45	45	50	50	49	48
Total bus miles	millions	1,092	1,157	1,105	1,209	1,202	1,182
Revenue passengers	millions	366	378	398	401	395	385
Revenue passenger-miles	millions	19,300	23,800	24,900	25,300	25,500	26,400
Operating revenue, all services	mil. dol.	556	701	846	901	953	1,021
Operating expenses	mil. dol.	495	600	752	812	882	935
Net operating revenue ³	mil. dol.	61	101	94	99	101	92

¹ Includes duplication between carriers. ² Operating companies only. ³ Before income taxes.
 Source: National Association of Motor Bus Owners, Washington, D.C., *Bus Facts*, and unpublished data.

No. 949. TRANSIT INDUSTRY—SUMMARY: 1950 TO 1973

[Money figures in millions of dollars, except as indicated. Prior to 1960, excludes Alaska and Hawaii. Comprises all privately and publicly owned organized local passenger transportation agencies except taxicabs, suburban railroads, and sightseeing and school buses. Covers (a) local motorbus lines, (b) electric street railways, (c) elevated and subway lines, (d) interurban electric railways, and (e) trolley coach lines. Based on financial and statistical reports received by American Transit Association from transit systems representing more than 85 percent of the industry. See also *Historical Statistics, Colonial Times to 1957*, series Q 330-340]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972	1973 (prel.)
Operating systems	1,406	1,483	1,251	1,148	1,086	1,079	1,063	1,045	1,020
Motorbus systems ¹	1,354	1,450	1,236	1,145	1,082	1,075	1,059	1,042	1,020
Publicly-owned systems	26	33	54	78	131	144	151	160	185
Miles of route operated (Dec. 31):									
Electric railway—single track	10,813	6,197	8,935	2,173	2,081	2,081	(NA)	(NA)	(NA)
Surface	9,590	4,976	2,602	918	762	(NA)	(NA)	(NA)	(NA)
Subway and elevated	1,223	1,221	1,243	1,255	1,319	1,319	(NA)	(NA)	(NA)
Trolley coach—overhead wire	3,482	3,428	2,198	766	563	(NA)	(NA)	(NA)	(NA)
Motorbus ²	1,000	98	100	109	121	117	113	(NA)	(NA)
Passenger vehicles owned	86,310	73,089	65,292	61,717	61,347	61,350	60,737	60,704	60,105
Electric railway cars	22,986	14,532	11,866	10,664	10,665	10,600	10,550	10,559	10,806
Surface	13,238	5,300	2,856	1,549	1,322	1,262	1,225	1,176	1,080
Subway and elevated	9,758	9,232	9,010	9,115	9,343	9,338	9,325	9,423	9,726
Trolley coaches	6,504	6,157	3,828	1,453	1,082	1,050	1,037	1,030	1,013
Motorbuses	56,820	52,400	49,600	49,600	49,600	49,700	49,150	49,075	48,286
Investment (Dec. 31)³	3,918	3,821	3,937	4,225	4,578	4,624	(NA)	(NA)	(NA)
Electric railway	3,060	2,902	3,003	3,243	3,502	3,537	(NA)	(NA)	(NA)
Surface	913	616	367	165	145	147	(NA)	(NA)	(NA)
Subway and elevated	2,147	2,286	2,636	3,078	3,357	3,391	(NA)	(NA)	(NA)
Motorbus	714	759	817	933	1,038	1,048	(NA)	(NA)	(NA)
Operating finances:									
Operating revenue ³	1,452	1,426	1,407	1,444	1,626	1,707	1,741	1,729	1,798
Electric railway	578	440	369	366	435	440	428	425	444
Surface	362	176	88	56	55	55	49	48	40
Subway and elevated	216	264	282	310	380	384	379	377	396
Motorbus	752	856	956	1,036	1,158	1,236	1,280	1,271	1,328
Operating expenses	1,297	1,277	1,200	1,374	1,745	1,802	2,040	2,128	2,362
Percent of revenue	89.3	89.6	91.7	95.2	107.3	110.8	117.2	123	131
Net revenue	155	149	117	70	4119	4184	4300	4400	4565
Taxes (all)	89	93	87	81	101	104	112	113	116
Operating income	66	56	31	411	4221	4288	4411	4513	4681
Revenue miles operated³ mil.	3,008	2,448	2,143	2,008	1,967	1,883	1,846	1,756	1,835
Electric railway	907	561	466	437	453	441	440	418	430
Surface	463	178	75	42	36	34	33	32	31
Subway and elevated	443	383	391	395	417	407	407	386	407
Motorbus	1,895	1,710	1,576	1,528	1,478	1,409	1,376	1,308	1,370
Passengers carried mil.	17,246	11,529	9,395	8,253	7,803	7,332	6,847	6,567	6,660
Electric railway	6,168	3,077	2,313	2,134	2,229	2,116	2,000	1,942	1,921
Surface	3,904	1,207	463	276	249	235	222	211	207
Subway and elevated	2,264	1,870	1,850	1,868	1,980	1,881	1,778	1,731	1,714
Trolley coach	1,658	1,202	657	505	199	182	148	130	97
Motorbus	9,420	7,250	6,425	5,814	5,375	5,034	4,699	4,495	4,642
Revenue passengers carried mil.	13,845	9,189	7,521	6,798	6,310	5,932	5,497	5,271	5,345
Electric railway	4,903	2,588	2,005	1,882	1,840	1,746	1,649	1,602	1,583
Surface	2,790	845	335	204	184	172	155	148	145
Subway and elevated	2,113	1,741	1,670	1,678	1,656	1,574	1,494	1,454	1,438
Trolley coach	1,261	869	447	186	135	128	113	100	75
Motorbus	7,681	5,734	5,089	4,730	4,335	4,058	3,735	3,569	3,687
Average fares (in cents):									
Subway and surface	11.56	17.35	22.09	23.82	25.03	27.03	25.85	26.83	26.60
Subway and elevated	9.92	14.79	16.14	16.63	21.89	23.42	24.17	24.86	25.88
Trolley coach	9.56	14.79	18.12	21.83	23.28	23.84	27.59	31.37	31.55
Motorbus	9.56	14.41	17.96	20.55	25.71	29.41	32.23	34.13	33.88
Employee, number (avg.) 1,000	240	198	156	145	141	138	139	138	140
Payroll, employee	835	864	857	964	1,184	1,274	1,303	1,455	1,616
Avg. earnings per employee dol.	3,479	4,364	5,481	6,645	8,404	9,230	10,014	10,515	11,544

NA Not available.

¹ Comprises companies operating motobuses exclusively and companies with combined services such as trolley coach and motorbus, etc.² Route round trip. ³ Includes trolley coach, not shown separately. ⁴ Deficit, not computed as percent of operating revenue. ⁵ Vehicle miles.Source: American Transit Association, Washington, D.C., *Transit Fact Book*, annual.

Bus Carriers—Intercity Motor Carriers—Truck Carriers 567

No. 950. BUS CARRIERS—REVENUE AND EXPENSES, BY TYPE OF SERVICE: 1967

[Money figures in thousands of dollars. Covers carriers with payroll not subject to Interstate Commerce Commission economic regulation. Excludes carriers operated by municipalities or other governmental bodies]

ITEM	Total	TYPE OF SERVICE				
		Local	Inter-city	Charter or special	Sightseeing	Airport
ALL CARRIERS¹						
Number of carriers.....	1,254	711	176	132	54	74
Operating revenue.....	562,118	455,190	38,741	16,659	14,745	26,113
Payroll, annual.....	304,909	255,518	20,152	6,689	5,507	11,884
Paid employees, week incl. March 12.....	51,580	42,057	3,743	1,746	1,084	2,216
CARRIERS REPORTING REVENUE AND EXPENSES						
Number of carriers.....	832	533	115	97	27	60
Revenue, total.....	460,503	383,350	28,586	12,120	11,768	24,679
Passenger revenue.....	414,269	340,761	27,169	11,600	10,580	24,159
Local service.....	319,926	318,613	379	774	—	160
Intercity service.....	24,751	449	23,883	404	—	15
Charter and special service.....	20,805	14,853	2,559	9,280	1,719	1,394
Airport service.....	23,068	277	25	69	222	22,415
School and sightseeing service.....	16,777	6,569	323	1,073	8,639	175
Nonpassenger revenue.....	46,234	42,589	1,417	520	1,188	520
Expenses: Payroll, annual.....	255,783	220,746	14,713	4,891	4,312	11,121
Other.....	172,503	136,965	13,199	6,501	6,370	9,378

— Represents zero. ¹ Includes unclassified carriers, not shown separately.

Source: U.S. Bureau of the Census, *U.S. Census of Business: 1967*, Misc. Subjects, BC 67-S88.

No. 951. CLASS I INTERCITY MOTOR CARRIERS OF PROPERTY: 1950 TO 1972

[Carriers subject to ICC regulations. Prior to 1960, excludes Alaska and Hawaii. See text, p. 546, for class limits]

ITEM	1950	1955	1960	1965	1970	1971	1972
Carriers reporting.....	1,621	2,244	935	1,114	1,376	1,355	1,525
Operating revenue.....	2,380	4,030	4,763	7,131	11,137	13,011	14,994
Common carrier.....	2,181	3,622	4,384	6,037	10,147	11,880	13,564
Contract carrier and other.....	199	408	370	403	900	1,131	1,430
Expenses.....	2,215	3,870	4,645	6,760	10,763	12,238	14,156
Net operating revenue.....	165	160	119	371	375	774	838
Ordinary income before income taxes.....	159	146	81	329	275	692	763
Net income after income taxes.....	93	82	37	209	150	410	460
Owned revenue vehicles.....	1,000	191	289	270	355	483	530
Trucks.....	1,000	29	37	31	36	54	56
Truck tractors.....	1,030	61	92	88	105	135	148
Trailers (semi and full).....	1,000	101	150	161	214	294	327
Intercity vehicle-mile.....	5,532	7,559	7,203	9,154	11,498	12,661	14,177
Tons of intercity revenue freight carried.....	213	314	276	419	552	553	652
Miles per power unit owned.....	53,833	53,008	50,590	65,217	63,051	67,731	68,353
Intercity revenue per intercity vehicle-mile.....	\$0.43	\$0.52	\$0.64	\$0.74	\$0.91	\$0.97	\$0.95
Total expense per intercity vehicle-mile.....	\$0.41	\$0.51	\$0.65	\$0.72	\$0.94	\$0.97	\$1.00
Number of employees, average.....	1,000	224	332	327	375	500	542
Compensation of employees.....	855	1,690	2,103	2,948	4,914	5,676	6,686

Source: U.S. Interstate Commerce Commission, *Transport Statistics in the United States*, Part 7, annual.

No. 952. TRUCK CARRIERS—REVENUE AND EXPENSES, BY TYPE OF CARRIER: 1967

[Money figures in millions of dollars. Covers only carriers with payroll not subject to Interstate Commerce Commission regulations. Based on a probability sample of all carriers with payroll in the "trucking, except with storage," industry; for details, see source]

TYPE OF CARRIER	ALL CARRIERS			CARRIERS REPORTING OPERATING REVENUE			Pay- roll, annu- al	
	Num- ber	Oper- ating rev- enue	Pay- roll, annu- al	Revenue		Other expen- ses		
				Total	Inter-city service			
Total.....	43,623	3,735	1,284	31,168	2,966	1,092	985	1,556
General freight.....	5,240	647	277	4,792	626	238	270	299
Household goods.....	1,963	106	43	1,655	96	28	39	44
Sand and gravel.....	5,598	588	131	5,037	542	149	125	325
Garbage collection.....	4,499	319	118	3,850	300	11	111	139
Retail store delivery.....	894	57	28	778	54	12	27	18
Agriculture and other ICC exempt prod.	7,921	618	180	7,403	602	335	154	366
Other types and unclassified.....	17,513	1,430	528	7,603	746	319	253	395

Source: U.S. Bureau of the Census, *U.S. Census of Business: 1967*, Misc. Subjects, BC 67-S88.

No. 953. RAILROADS—SUMMARY STATISTICS: 1940 TO 1972

[As of December 31. Prior to 1960, excludes Alaska and Hawaii. Covers class I and II railroads, excluding switching and terminal companies, except as noted. Includes intercorporate duplications. See also *Historical Statistics, Colonial Times to 1957*, series Q 44-124.]

ITEM	1940	1950	1960	1965	1970	1971	1972
Operating companies ¹ —number	574	471	407	372	351	341	332
Mileage:							
Road owned, first track ²	233,670	223,770	217,552	211,384	205,782	204,696	202,775
Track operated:							
Reporting railroads ³	405,975	396,380	381,745	370,636	360,330	350,194	355,965
First track ⁴	245,740	236,857	230,189	226,015	220,107	219,945	218,024
Other main tracks	41,373	40,455	34,800	31,113	28,682	28,532	28,257
Yardtrack and sidings	118,862	119,067	116,776	113,508	111,541	110,717	109,684
Operated by receivers or trustees	75,270	12,223	1,259	1,690	23,100	24,137	(NA)
Equipment: ⁴							
Locomotives in service—number	44,333	42,951	31,178	30,061	29,122	29,185	29,338
Average tractive effort ⁵ —pounds	50,905	57,075	61,314	63,096	61,944	61,938	62,044
Cars in service:							
Passenger-train—number	38,308	37,359	25,746	20,022	11,378	8,869	7,763
Freight train ⁶ —1,000-ton	1,684	1,748	1,690	1,515	1,454	1,441	1,411
Average capacity ⁸	50.0	52.6	55.4	59.8	67.1	68.4	69.0
Capital and property investment: ⁹							
Road and equipment, book value ¹⁰							
mil. dol.	25,646	30,174	35,513	35,489	37,918	38,022	37,359
Depreciation reserve ¹¹	3,095	6,629	8,532	9,342	9,030	10,078	9,600
Capitalization outstanding ¹²	21,047	18,274	16,134	14,857	14,339	13,588	12,968
Capital surplus and retained income							
mil. dol.	2,783	7,037	11,356	12,945	13,002	12,394	12,404
Stock paying dividends	3,741	6,769	5,617	4,845	3,595	3,508	3,472
Dividends declared	217	349	412	533	486	804	532
Interest accrued on funded debt	547	367	387	403	554	575	578
Income and expenses:							
Operating revenues	4,355	9,587	9,642	10,425	12,200	13,018	13,822
Operating expenses	3,132	7,135	7,657	8,003	9,806	10,388	11,010
Tax accruals	403	1,212	1,020	949	1,104	1,138	1,198
Net railway operating income	691	1,055	595	980	506	620	705
Net income ⁹	243	855	473	806	13,126	13,338	13,295
Passenger service:							
Passenger revenue	418	815	641	556	423	384	400
Passengers carried	456	488	327	306	289	276	262
Passenger-miles	23,816	31,790	21,284	17,454	10,788	8,863	8,572
Commutation ⁸	3,997	4,990	4,197	4,128	4,592	4,493	4,229
Coach ⁸	12,485	17,443	13,422	11,069	5,414	3,887	3,812
Parlor and sleeping car ⁸	7,288	9,338	3,643	2,191	5,765	516	520
Revenue per passenger-mile	1.76	2.56	3.01	3.19	3.92	4.33	4.77
Average journey per passenger	52.22	65.14	65.05	57.07	37.26	32.17	32.71
Freight service:							
Freight revenue	3,584	7,034	8,152	9,037	11,124	11,996	12,790
Revenue-ton originated	1,069	1,421	1,301	1,479	1,572	1,472	1,531
Tons carried one mile	375,369	501,550	575,360	705,705	771,012	745,828	782,598
Revenue ton-miles per mile of road	1,526	2,497	2,497	3,121	3,488	3,015	3,068
Revenue per ton-mile	0.955	1,341	1,417	1,281	1,443	1,608	1,684
Haul per ton, U.S. as a system	351.13	416.32	442.14	477.15	490.41	506.83	511.08
Number of employees, average	1,000	1,046	1,237	793	655	577	537
Compensation of employees	1,991	4,645	4,957	4,887	5,646	5,990	6,531
Accidents: ¹⁴							
Persons killed	4,740	3,398	2,248	2,399	2,225	2,010	1,945
Persons injured	29,006	33,235	19,577	25,789	21,327	18,972	17,930

NA Not available. ¹ Includes unofficial companies and, through 1960, circular companies; see text; p. 546.

² Includes lessors, proprietary, unofficial, and, through 1960, circular companies.

³ Includes mileage in Canada.

⁴ Includes switching and terminal companies, except average tractive effort and average capacity.

⁵ For 1950, steam locomotives of class I railroads; beginning 1960, all locomotives of class I railroads.

⁶ Represents horsepower. ⁷ Excludes caboose cars. ⁸ Class I railroads only. ⁹ Includes lessors.

¹⁰ Increase in investment over a period of years cannot be obtained accurately by subtraction of 1 year's investment from that of another owing to reorganization, sale or abandonment, reclassification, etc. Also includes proprietary companies. ¹¹ Includes amortization applicable to proprietary companies.

¹² Comprises common stock, preferred stock, and funded debt unamortized.

¹³ After extraordinary and prior period items. ¹⁴ Includes highway grade crossing casualties.

Source: U.S. Interstate Commerce Commission, *Transport Statistics in the United States*, Part 1, annual, and *Accident Bulletin*, annual. Beginning 1970, accident data from U.S. Federal Railroad Administration, *Accident Bulletin*, annual.

No. 954. RAILROADS, CLASS I LINE-HAUL—REVENUES AND EXPENSES: 1950 TO 1973
 [In millions of dollars, except percent. See text, p. 546, for explanation of class limits. See also *Historical Statistics, Colonial Times to 1957*, series Q 103-117]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973 (prel.)
Operating revenues	9,473	10,106	9,514	10,208	11,992	12,790	13,175	15,015
Freight	7,817	8,538	8,025	8,836	10,922	11,786	12,187	13,794
Passenger	813	743	640	553	420	380	395	443
Mail	374	287	331	311	161	124	95	88
Express	81	118	100	77	22	11	5	4
Other	387	420	417	431	400	489	493	637
Operating expenses	7,059	7,646	7,565	7,850	9,660	10,235	10,530	11,918
Maintenance	2,995	3,175	2,952	3,011	3,778	4,214	4,253	4,652
Way and structures	1,287	1,387	1,192	1,236	1,613	1,818	1,864	2,050
Equipment	1,708	1,788	1,760	1,775	2,165	2,306	2,389	2,602
Traffic	192	235	258	262	285	291	301	333
Transportation, rail line	3,491	3,770	3,833	4,020	4,873	4,969	5,185	6,067
Miscellaneous operations	110	108	82	67	46	38	42	48
General	271	357	441	490	678	723	748	817
Net revenue from railway operations	2,414	2,466	1,951	2,358	2,332	2,556	2,645	3,098
Tax accruals	1,195	1,081	909	916	1,069	1,100	1,120	1,376
Railway operating income	1,219	1,385	952	1,442	1,263	1,455	1,525	1,721
Net railway operating income	1,040	1,128	584	962	486	603	658	700
Ratio of expenses to revenues (percent)	74.5	75.6	79.5	76.9	80.6	80.0	79.9	79.3
Gross expend. for capital improvements	1,065	908	919	1,631	1,351	1,192	1,241	1,436
Equipment	779	568	634	1,304	993	878	875	977
Roadway and structures	286	340	286	327	368	314	366	459

No. 955. RAILROADS, CLASS I LINE-HAUL—SELECTED PASSENGER STATISTICS: 1950 TO 1973

[See text, p. 546, for explanation of class limits. See also *Historical Statistics, Colonial Times to 1957*, series Q 87-89]

ITEM	1950	1955	1960	1965	1970	1972	1973
Average miles of road operated	146,468	119,745	94,117	76,993	49,533	29,398	28,286
Pasenger revenue	813	743	640	553	420	407	443
Revenue per passenger-mile:							
Incl. commutation passengers	cents	2.56	2.60	3.01	3.18	3.90	4.76
Excl. commutation passengers	cents	2.74	2.70	3.03	3.14	4.02	5.31
Revenue passengers carried	millions	486	432	326	299	284	261
Revenue passenger-miles	millions	31,760	28,525	21,258	17,389	10,770	8,560
Average distance	miles	65.3	66.0	65.2	58.2	37.9	32.8
Revenue passenger-miles per train-mile		88.5	95.2	100.9	100.9	117.1	140.3
Revenue passenger-miles per car-mile		17.0	17.8	19.3	19.5	25.8	33.3
Passenger-train miles	millions	358	299	209	172	92	61
Passenger-carrying car-miles	millions	1,870	1,602	1,101	885	417	257
Train-miles per train-hour		37.4	39.8	40.7	41.3	40.1	37.6

No. 956. RAILROADS, CLASS I LINE-HAUL—SELECTED FREIGHT STATISTICS: 1950 TO 1973

[Excludes switching and terminal roads. Tons of 2,000 pounds. See text, p. 546, for explanation of class limits. See also *Historical Statistics, Colonial Times to 1957*, series Q 93]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973
Average miles of road operated	225,605	222,901	219,381	212,133	209,401	209,293	208,012	205,175
Freight revenue	mil. dol.	7,817	8,538	8,025	8,836	10,913	11,786	12,572
Per ton-mile	cents	1.33	1.37	1.40	1.27	1.43	1.59	1.62
Per ton per road	dollars	3.04	3.25	3.51	3.48	4.18	4.70	5.21
Revenue freight:								
Tons originated	millions	1,354	1,393	1,241	1,387	1,485	1,391	1,448
Tons carried	millions	2,570	2,618	2,201	2,530	2,614	2,459	2,544
Net ton miles	millions	588,578	623,615	572,309	607,730	762,544	739,301	777,851
Average distance	miles	229.0	237.6	250.0	274.8	291.7	300.7	305.8
Train miles	millions	515	476	405	421	427	430	451
Freight car miles, loaded	millions	19,644	20,099	17,287	17,885	17,300	16,501	17,134
Empty	millions	10,140	11,054	10,872	11,420	12,627	12,680	13,171
Net ton-miles per train-mile	1	1,224	1,374	1,466	1,683	1,820	1,751	1,774
Net ton-miles per loaded car-mile	1	31.7	32.0	33.9	39.7	44.9	45.6	46.7
Train-miles per train-hour		16.8	18.6	19.5	20.1	20.1	20.4	19.8

¹ Revenue and nonrevenue freight.

Source of tables 954-956: U.S. Interstate Commerce Commission, *Annual Report and Transport Statistics in the United States*, Part 1, related monthly and quarterly reports, and *Financial and Operating Statistics, Class I Railroads*, Statement No. 100, semiannual; and unpublished data.

No. 957. RAILROAD COMPANIES, BY CLASS: 1950 TO 1971

[Prior to 1960, excludes Alaska and Hawaii. See text, p. 546, for explanation of class limits]

CLASS OF COMPANY	1950	1955	1960	1965	1968	1969	1970	1971
Total.....	1,038	1,935	1,842	763	738	721	708	700
Class I line-haul operating.....	127	126	106	76	75	73	71	70
Lessors to class I.....	179	155	128	116	115	112	114	112
Class II line-haul operating.....	171	155	304	302	287	282	273	269
Lessors to class II.....	6	8	8	15	14	14	14	14
Switching and terminal ²	253	237	221	205	197	193	190	189
Proprietary ³	100	67	53	45	44	41	39	38
Unofficial.....	9	6	1	4	6	6	7	8

¹ Includes class III railroads for 1950 and 1955, and circular railroads through 1960, not shown separately.² Includes operating, lessor, proprietary, and unofficial companies, and, through 1960, circular.³ Excludes those in systems which file consolidated reports combining mileage, investment, and other items on a net system basis.Source: U.S. Interstate Commerce Commission, *Statistics of Railways in the United States*, annual, and, beginning 1955, *Transport Statistics in the United States*, Part 1, annual.

No. 958. RAILROADS—EQUIPMENT IN SERVICE: 1950 TO 1971

[Prior to 1960, excludes Alaska and Hawaii. See also *Historical Statistics, Colonial Times to 1957*, series Q 53-65]

ITEM	1950	1955	1960	1965	1969	1970	1971
Locomotives.....							
Steam.....	42,951	33,533	31,178	30,061	29,090	29,122	29,185
Electric.....	26,680	6,266	374	89	—	—	—
Diesel.....	827	639	498	365	278	270	255
Other.....	15,396	26,563	30,240	29,552	28,711	28,773	28,831
New units installed ¹	48	65	66	55	101	79	99
Freight cars².....	1,000	1,746	1,690	1,515	1,464	1,469	1,456
Box.....	1,000	718	724	700	593	597	582
Gondola and hopper.....	1,000	875	846	831	754	726	721
Other.....	1,000	153	154	159	168	141	155
Aggregate capacity ¹.....1,000 tons	90,465	91,229	91,048	88,323	94,346	95,556	96,488
Average capacity ¹.....tons	52.6	53.7	55.4	59.8	65.8	67.1	68.4
New units installed ¹	40,032	29,070	54,032	62,859	37,842	37,281	36,500
Passenger-train cars.....	37,359	32,118	25,746	20,022	12,630	11,378	8,869
Coaches.....	16,488	13,543	10,287	8,086	6,680	6,522	5,681
Average seating capacity ¹	75	75	76	76	87	88	95
Nonpassenger (baggage, express, etc.).....	13,817	13,388	10,077	8,411	4,082	3,227	1,911
Other.....	7,054	5,187	5,382	3,525	1,868	1,629	1,277
New units installed ¹	1,078	412	251	666	240	33	2

¹ Represents zero. ² Class I railroads. ² Excludes caboose cars.Source: U.S. Interstate Commerce Commission, *Transport Statistics in the United States*, Part 1, annual.

No. 959. RAILROADS, CLASS I LINE-HAUL—FUEL AND POWER CONSUMED AND RAILS AND TIES LAID: 1950 TO 1972

[See text, p. 546, for explanation of class limits. See also *Historical Statistics, Colonial Times to 1957*, series Q 128-137]

ITEM	1950	1955	1960	1965	1970	1971	1972
Fuel and power consumed:							
Coal.....1,000 short tons..	55,452	11,427	39	4	1	1	1
Fuel oil.....mil. gal.	2,284	376	89	77	—	—	—
Diesel oil.....mil. gal.	1,827	3,393	3,472	3,742	3,808	3,823	4,071
Electricity.....mil. kw.-hr.	2,260	2,082	1,641	1,509	1,341	1,280	669
Rails and ties laid:							
Rails.....1,000 short tons..	2,628	2,099	1,066	1,167	1,174	1,379	1,400
Ties:							
Crossties.....1,000	33,091	27,173	16,417	16,982	19,611	22,777	20,730
Switch and bridge ties.....1,000 board ft.	118,091	99,886	63,373	61,739	60,002	60,369	51,960

¹ Represents zero.¹ New and used rails and ties used in replacement, additional tracks, new lines, and extensions.Source: U.S. Interstate Commerce Commission, *Annual Report* and *Transport Statistics in the United States*, Part 1.

Railroads

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No. 960. RAILROADS—MILES OF ROAD OWNED, BY GEOGRAPHIC DIVISION: 1950 TO 1972

[As of December 31. Data are for actual length of line owned by line-haul companies in each State without duplication. For composition of divisions, see fig. I, inside front cover]

DIVISION	1950	1960	1970	1972	DIVISION	1950	1960	1970	1972
U.S.	224,371	217,552	205,782	202,775	South Atlantic	27,924	27,362	25,816	25,546
New England	6,396	6,088	5,515	5,403	E. South Central	16,574	15,238	14,974	14,924
Middle Atlantic	19,180	17,469	15,759	15,477	W. South Central	29,771	28,341	26,349	25,978
E. North Central	39,851	38,949	37,230	36,897	Mountain	22,101	21,355	20,593	20,314
W. North Central	47,108	46,367	44,003	42,961	Pacific	16,466	16,388	15,453	15,275

Source: U.S. Interstate Commerce Commission, *Statistics of Railways in the United States*, annual, and, beginning 1960, *Transport Statistics in the United States*, Part 1, annual.

No. 961. RAILROADS, CLASS I—CARS OF REVENUE FREIGHT LOADED, 1950 TO 1973, AND BY COMMODITY GROUP, 1973

[In thousands. Figures are 52-week totals. See text, p. 546, for explanation of class limits. "N.e.c." means not elsewhere classified]

Year	CARS LOADED		COMMODITY GROUP	Number, 1973	COMMODITY GROUP	Number, 1973
	Total	Piggy-back ¹				
1950	38,903	(NA)	Coal	4,487	Grain mill products	1,066
1955	37,636	168	Metallic ores	1,930	Lumber and wood prod., n.e.c.	860
1960	30,441	554	Crushed stone, gravel and sand	1,454	Waste and scrap materials	831
1965	20,248	1,034	Chemicals and allied products	1,457	Farm products, except grain	642
1967	28,084	1,207	Grain	1,082	Petroleum products	484
1968	28,253	1,337	Food and kindred prod., n.e.c.	1,175	Nonmetallic minerals, n.e.c.	766
1969	28,237	1,344	Primary forest products	1,231	Coke	434
1970	27,160	1,257	Metals and products	1,393	Forwarder and shipper association traffic	502
1971	25,286	1,199	Motor vehicles and equipment	1,352	All other carloads	3,272
1972	26,105	1,331	Pulp, paper, and allied products	1,184	Less than carload	25
1973	27,322	1,543	Stone, clay, and glass products	1,095		

NA Not available. ¹ Except furniture.

Source: Association of American Railroads, Washington, D.C., *Cars of Revenue Freight Loaded*, annual.

No. 962. REVENUE FREIGHT ORIGINATED, BY COMMODITY GROUP—CLASS I RAILROADS, 1972, AND MOTOR CARRIERS OF PROPERTY, 1971

[Carloads and tons in thousands; revenue in millions of dollars. See text, p. 546, for explanation of class limits]

COMMODITY GROUP	RAILROADS, 1972			MOTOR CARRIERS, 1971		
	Carloads	Tons	Revenue ¹	Truckloads	Tons	Revenue ¹
	Total					
Farm products	2,003	129,766	1,143	881	7,552	115
Metallic ores	1,357	110,934	335	26	570	5
Coal	4,075	374,970	1,379	16	455	2
Nonmetallic minerals, except fuels	2,193	164,895	455	268	5,670	31
Ordnance and accessories	50	2,593	107	31	550	26
Food and kindred products	2,470	100,056	1,484	1,649	29,254	658
Basic textiles	71	1,376	44	318	4,136	115
Lumber and wood products, exc. furniture	2,160	109,986	1,117	218	4,094	52
Furniture and fixtures	232	2,002	117	52	477	22
Pulp, paper, and allied products	1,179	44,299	847	681	10,505	217
Printed matter	19	568	17	143	2,057	61
Chemicals and allied products	1,510	95,163	1,328	2,122	39,734	634
Petroleum and coal products	904	47,957	426	4,521	109,456	405
Rubber and misc. plastic products	246	4,037	137	311	3,816	141
Stone, clay, and glass products	1,225	73,457	605	1,287	26,109	227
Primary metal products	971	60,383	736	1,508	29,873	463
Fabricated metal products ²	320	9,380	100	445	5,948	151
Machinery, except electrical	169	3,748	152	398	5,523	197
Electrical mch'y., equip. and supplies	326	4,550	195	271	3,030	122
Transportation equipment	1,345	31,373	1,124	2,065	23,828	584
Waste and scrap materials	779	39,795	268	58	1,022	14
Freight forwarder traffic	216	3,977	149	74	852	23
Small packaged shipments	(X)	661	27	(X)	66,876	4,911
Other	1,196	26,536	622	941	14,282	329

X Not applicable. ¹ Gross. ² Except ordnance, machinery, and transport.

Source: U.S. Interstate Commerce Commission, *Freight Commodity Statistics—Class I Railroads in the United States*, annual, and *Class I Motor Carriers, Property Operating in Intercity Service*, annual.

No. 963. MAJOR CLASS I RAILROADS CONTROLLED BY CONGLOMERATE HOLDING COMPANIES: 1967 TO 1972

ITEM	Oper- ating revenue (mil. dol.)	Freight revenues (mil. dol.)	Ton miles (bill.)	ITEM	Oper- ating revenue (mil. dol.)	Freight revenues (mil. dol.)	Ton miles (bill.)
1967:				1971:			
Total class I railroads.....	10,366	9,130	719	Total class I railroads.....	12,790	11,786	740
Under direct conglomerate control.....	1,038	917	74	Under conglomerate control.....	7,808	6,803	429
Percent of total.....	10.0	10.0	10.2	Percent of total.....	57.1	57.7	58.0
1968:				Directly controlled.....	6,370	5,893	368
Total class I railroads.....	10,855	9,750	744	Percent of total.....	49.8	50.0	49.7
Under direct conglomerate control.....	1,770	1,599	124	Indirectly controlled.....	937	910	61
Percent of total.....	16.4	16.4	16.7				
1969:				1972:			
Total class I railroads.....	11,450	10,346	768	Total class I railroads.....	13,586	12,572	778
Under direct conglomerate control.....	5,702	5,079	371	Under conglomerate control.....	7,827	7,384	461
Percent of total.....	49.8	49.1	48.3	Percent of total.....	57.6	58.7	59.2
1970:				Directly controlled.....	6,825	6,407	396
Total class I railroads.....	11,985	10,916	783	Percent of total.....	50.2	51.0	51.0
Under direct conglomerate control.....	5,923	5,323	369	Indirectly controlled.....	1,002	977	65
Percent of total.....	49.4	48.8	48.4				

Source: U.S. Congress, Committee on Government Operations, *Disclosure of Corporate Ownership*.

No. 964. RAILROADS—EMPLOYEES, HOURS, AND COMPENSATION: 1950 TO 1972

[Excludes switching and terminal roads. See also *Historical Statistics, Colonial Times to 1957*, series Q 141-142]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
Classes I and II line-haul railroads: ¹								
Employees, average.....	1,000	2,123	3,1,071	793	655	590	577	555
Compensation of employees..... mil. dol.	2,645	2,045	4,957	4,887	5,451	5,646	5,990	(NA)
Class I line-haul railroads: ¹								
Employees, average.....	1,000	1,220	1,058	780	640	578	566	544
Man-hours paid for..... mil.	2,877	2,503	1,841	1,565	1,414	1,379	1,304	1,064
Average hours per employee.....	2,357	2,366	2,358	2,445	2,446	2,436	2,397	2,018
Compensation of employees:								
Total..... mil. dol.	4,594	4,992	4,894	4,793	5,363	5,557	5,895	6,434
Average per hour..... dol.	1,60	2,00	2,66	3,06	3,79	4,04	4,52	6,05
Average per year..... dol.	8,765	4,719	6,270	7,490	9,279	9,841	10,836	12,209

NA Not available. ¹ See text, p. 546, for explanation of class limits. ² Excludes Alaska and Hawaii.

Source: U.S. Interstate Commerce Commission, *Transport Statistics in the United States*, Part 1, annual, and Statement No. A-300, annual.

No. 965. RAILROAD ACCIDENTS—PERSONS KILLED AND PERSONS INJURED, BY TYPE OF ACCIDENT: 1950 TO 1972

[Prior to 1960, excludes Alaska and Hawaii. Covers all reportable accidents, i.e., those resulting in personal casualty or in damage to railroad property exceeding amounts specified by Federal Railroad Administration. See also *Historical Statistics, Colonial Times to 1957*, series Q 143-144]

TYPE OF ACCIDENT	1950	1955	1960	1965	1969	1970	1971	1972
Killed, number.....	3,398	2,667	2,248	2,399	2,299	2,225	2,010	1,945
Injured, number.....	33,255	27,832	19,577	25,789	23,356	21,327	18,972	17,930
Train: Killed.....	336	259	156	191	203	210	171	171
Injured.....	2,315	1,183	847	864	1,173	627	694	777
Train services: Killed.....	2,921	2,316	2,042	2,136	2,011	1,936	1,792	1,704
Injured.....	19,454	16,856	12,877	16,577	14,986	13,878	12,171	11,507
Nontrain: Killed.....	141	92	50	72	85	79	47	70
Injured.....	11,486	9,793	5,853	8,848	7,197	6,822	6,107	5,646

Source: 1950-1965, U.S. Interstate Commerce Commission, *Accident Bulletin*, annual; thereafter, U.S. Federal Railroad Administration, *Accident Bulletin*, annual.

Highway Grade Crossings—Petroleum Pipelines

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No. 966. HIGHWAY GRADE CROSSINGS—NUMBER AND ACCIDENTS: 1950 TO 1972

[Prior to 1960, excludes Alaska and Hawaii. Covers all railroads, except as noted. See also headnote, table 965.
See also *Historical Statistics, Colonial Times to 1957*, series Q 125-127.]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
Highway grade crossings ¹	227,364	226,318	224,513	215,961	211,740	210,954	210,640	209,780
Specially protected ²	35,968	39,060	42,267	44,333	45,961	46,674	47,440	48,385
Eliminated by separation of grades.....	61	84	102	59	49	95	118	28
Accidents, number ³	4,000	3,846	3,195	3,820	3,774	3,559	3,392	3,379
Persons killed ³	1,576	1,446	1,384	1,534	1,490	1,440	1,356	1,280
Persons injured ³	4,368	4,014	3,424	3,801	3,669	3,336	3,332	3,285
Involving motor vehicles: ⁴								
Persons killed.....	1,303	1,313	1,254	1,434	1,362	1,337	1,240	1,170
Persons injured.....	4,206	3,886	3,277	3,663	3,556	3,205	3,229	3,177

¹ Class I railroads only, except 1972, which includes all classes. ² Includes crossings with operated gates or watchmen, or both, during at least part of day; and those with audible or visible signals, or both. Excludes those with fixed signs only. ³ Excludes nontrain accidents. ⁴ Excludes motorcycles.

Source: U.S. Interstate Commerce Commission, *Accident Bulletin*, annual, and *Transport Statistics in the United States*, Part 1, annual (formerly *Statistics of Railways in the United States*). Beginning 1960, accident data from U.S. Federal Railroad Administration, *Accident Bulletin*, annual.

No. 967. PETROLEUM PIPELINE COMPANIES—SUMMARY: 1950 TO 1972

[Prior to 1960, excludes Alaska and Hawaii. Refers to pipeline companies operating in interstate commerce and subject to jurisdiction of Interstate Commerce Commission. See *Historical Statistics, Colonial Times to 1957*, series Q 342-344 for miles of line operated and oil originated]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
Companies reporting.....number.....	76	84	87	89	99	101	90	99
Miles of line operated.....1,000.....	129	140	152	161	171	176	178	174
Gathering lines.....1,000.....	48	51	49	47	46	47	46	43
Trunk lines.....1,000.....	81	90	103	115	125	129	129	131
Investment in carrier property.....mil. dol.	1,656	2,586	3,300	4,178	5,379	5,788	6,305	6,759
Investments and special funds.....mil. dol.	101	81	114	59	147	250	291	327
Cash.....mil. dol.	65	94	94	110	107	104	(NA)	(NA)
Current assets.....mil. dol.	192	353	393	555	644	628	636	672
Current liabilities.....mil. dol.	126	185	187	301	441	480	499	549
Retained income.....mil. dol.	219	432	701	835	1,037	1,124	1,177	1,263
Capitalization.....mil. dol.	660	1,282	1,439	1,635	2,267	2,518	2,964	3,183
Capital stock.....mil. dol.	236	331	384	382	444	450	449	428
Long-term debt.....mil. dol.	424	651	1,056	1,253	1,823	2,068	2,515	2,755
Dividends declared.....mil. dol.	51	101	143	197	180	217	233	226
Operating revenues.....mil. dol.	442	678	770	904	1,103	1,188	1,249	1,338
Operating expenses ¹.....mil. dol.	255	347	418	515	643	672	712	780
Net carrier operating income.....mil. dol.	(2) ²	(2) ²	(2) ²	389	461	516	537	558
Other income and deductions.....mil. dol.	(2) ²	(2) ²	(2) ²	-39	-71	-75	-83	-107
Ordinary income before income taxes.....mil. dol.	(2) ²	(2) ²	(2) ²	349	390	440	455	451
Net income.....mil. dol.	81	153	169	218	273	312	314	332
Oil transported:								
Total received into system.....mil. bbl.	2,766	4,058	4,783	5,868	7,755	8,164	8,342	8,867
From connecting carriers.....mil. bbl.	944	1,434	1,636	1,620	2,034	2,146	2,227	2,357
Crude oil.....mil. bbl.	879	1,299	1,402	1,885	1,688	1,730	1,780	1,879
Products.....mil. bbl.	65	184	234	235	396	416	447	477
Originated.....mil. bbl.	1,822	2,624	3,147	4,247	5,721	6,018	6,114	6,511
Crude oil.....mil. bbl.	1,525	2,038	2,289	2,618	3,405	3,568	3,517	3,615
Products.....mil. bbl.	207	586	909	1,629	2,316	2,449	2,597	2,896
Total delivered out of system.....mil. bbl.	2,740	4,089	4,783	5,864	7,745	8,147	8,183	8,889
To connecting carriers.....mil. bbl.	937	1,444	1,639	1,757	2,243	2,320	2,314	2,552
Crude oil.....mil. bbl.	874	1,329	1,400	1,361	1,696	1,767	1,771	1,914
Products.....mil. bbl.	63	115	240	396	546	553	543	638
Terminated.....mil. bbl.	1,803	2,595	3,144	4,107	5,499	5,827	5,870	6,836
Crude oil.....mil. bbl.	1,510	1,992	2,283	2,641	3,396	3,521	3,537	3,600
Products.....mil. bbl.	293	603	891	1,466	2,164	2,306	2,333	2,736
Trunk line movement:								
Crude oil.....mil. bbl.	1,977	2,781	3,091	3,505	4,446	4,755	4,781	5,112
Products.....mil. bbl.	360	717	1,124	1,872	2,719	2,864	3,017	3,358
Barrel-miles, trunk lines:								
Crude oil.....bil.	577	839	976	1,121	1,322	1,428	1,439	1,526
Products.....bil.	107	205	304	627	995	1,021	1,045	1,187
Employees, average.....1,000.....	26	25	21	17	16	15	15	15
Compensation of employees.....mil. dol.	115	142	151	141	159	162	172	184

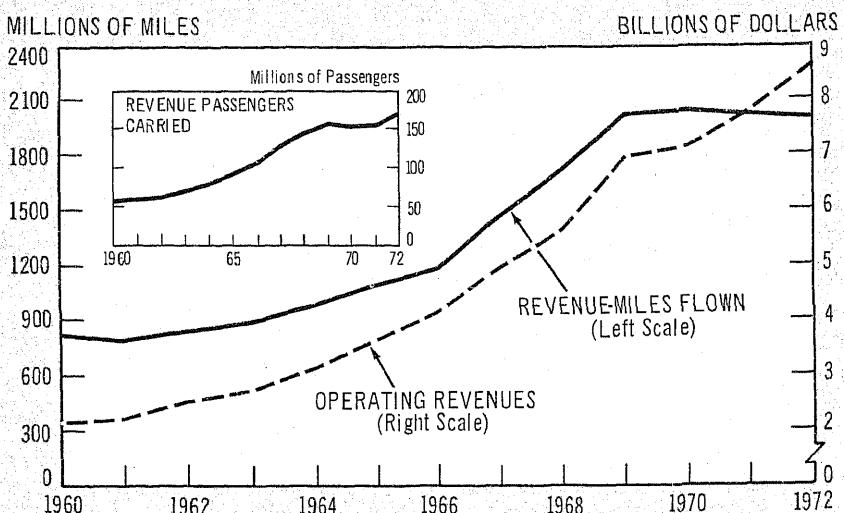
NA. Not available. ¹ Includes pipeline taxes; excludes Federal income taxes.

² Years prior to 1965 based on a different system of accounts, therefore, comparable data not available.

Source: U.S. Interstate Commerce Commission, *Statistics of Oil Pipeline Companies*, annual; and, beginning 1955, *Transport Statistics in the United States*, Part 6, annual.

FIG. XXXIX. DOMESTIC SCHEDULED AIR CARRIERS—REVENUES, MILES FLOWN,
AND PASSENGERS CARRIED: 1960 TO 1972

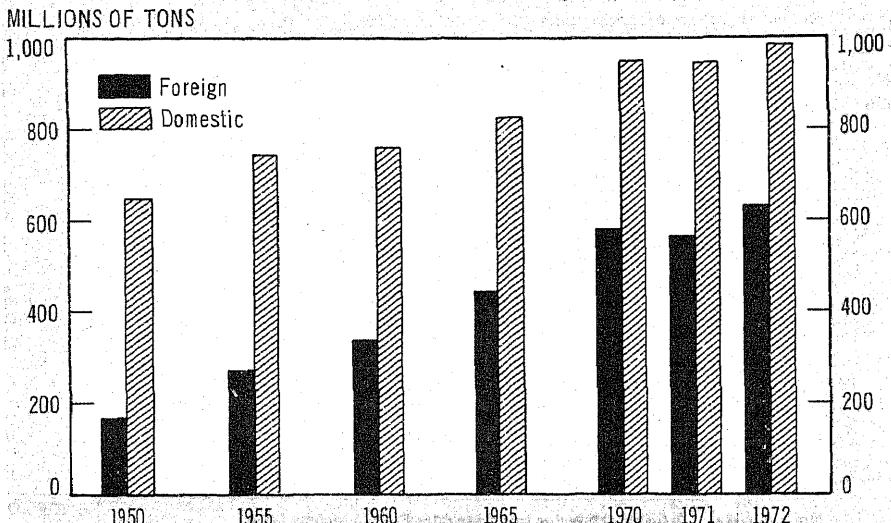
[See tables 968 and 972]



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Federal Aviation Administration.

FIG. XL. WATERBORNE COMMERCE OF THE UNITED STATES: 1950 TO 1972

[See table 981]



Source: Chart prepared by U.S. Bureau of the Census. Data from U.S. Corps of Engineers.

Section 22

Transportation—Air and Water

This section presents statistics on civil air transportation, both passenger and cargo, and on water transportation, including inland waterways, oceanborne commerce, the merchant marine, cargo and vessel tonnages, and shipbuilding. The principal sources of these data are the annual *FAA Statistical Handbook of Aviation*, issued by the Federal Aviation Administration; the annual *Waterborne Commerce of the United States* and the *Annual Report of the Chief of Engineers*, Part 2, issued by the Corps of Engineers of the Department of the Army; the monthly and annual *U.S. Waterborne Foreign Trade*, *U.S. Airborne Foreign Trade*, the annual *Vessel Entrances and Clearances*, and the monthly *Highlights of U.S. Export and Import Trade*, issued by the Bureau of the Census; and unpublished data from the Bureau of Customs and U.S. Coast Guard.

Data on air transportation are also presented in *Air Transport Facts and Figures*, published annually by the Air Transport Association of America, Washington, D.C. Additional sources of data on water transportation include *A Statistical Analysis of the World's Merchant Fleets*, issued periodically by the Maritime Administration of the Department of Commerce; *The Bulletin*, issued monthly by the American Bureau of Shipping, New York; and the *Annual Summary of Merchant Ships Launched in the World* and the *Register Book* published by Lloyd's Register of Shipping, London, England. The 1921 through 1946, the 1946–1963, the 1964, and the 1965 issues of *Foreign Commerce and Navigation of the United States*, published by the Bureau of the Census, are basic sources of historical data. Data relating to merchandise exports and imports are in section 30 of this *Abstract*, Foreign Commerce and Aid.

Civil aviation.—Federal promotion and regulation of civil aviation are carried out by the Federal Aviation Administration and the Civil Aeronautics Board. The Board issues certificates permitting persons to engage in air transportation as a business, fixes air mail rates which they may charge, and may establish maximum and minimum rates for transportation of passengers and goods. The responsibility for investigation of aviation accidents, formerly held by the Civil Aeronautics Board, resides with the National Transportation Safety Board of the Department of Transportation.

The principal activities of the Federal Aviation Administration are: Controlling the use of navigable airspace; prescribing regulations dealing with the competency of airmen, airworthiness of aircraft, and air traffic control; operation of air route traffic control centers, airport traffic control towers, and flight service stations; the design, construction, maintenance, and inspection of navigation, traffic control, and communications equipment for the airways; and promotion of air safety.

These agencies publish annual operational data on the use of airway facilities; data related to the location of airmen, aircraft, and airports; the activity volume in the field of non-air carrier (general aviation) flying; and aircraft production and registration.

Air carriers and service.—The term *certificated route air carrier* refers to air carriers holding certificates of public convenience and necessity, issued by the Civil Aeronautics Board, authorizing the performance of scheduled air transportation over specified routes and a limited amount of nonscheduled operations. This general carrier grouping includes the so-called passenger/cargo carriers and the all-cargo carriers, and comprises all of the airlines certificated by the board, except the supplemental air carriers. Certificated route air carriers are often referred to as "scheduled airlines," although they also perform nonscheduled service. *Nonscheduled service* comprises revenue flights that are not operated in regular scheduled service, such as charter flights, and all nonrevenue flights incident to such flights. *Scheduled service* is transport service operated over an air carrier's certificated routes, based on published flight schedules, including extra sections and related nonrevenue flights.

Vessel shipments, entrances, and clearances.—Shipments by dry cargo vessels comprise shipments on all types of watercraft, except tanker vessels; shipments by tanker vessels comprise all types of cargo, liquid and dry, carried by tanker vessels.

A vessel is reported as entered only at the first port which it enters in the United States whether or not cargo is unloaded at that port. A vessel is reported as cleared only at the last port at which clearance is made to a foreign port, whether or not it takes on cargo. Army and Navy vessels entering or clearing without commercial cargo and vessels touching at a United States port in distress, or for other temporary causes without discharging cargo, are not included in the figures.

Units of measurement.—Cargo tonnage and shipping weight both represent the gross weight of the cargo including the weight of containers, wrappings, crates, etc. However, shipping weight excludes lift and cargo vans and similar substantial outer containers. Other tonnage figures generally refer to stowing capacity of vessels, 100 cubic feet being called 1 ton. Gross tonnage comprises the space within the frames and the ceiling of the hull, together with those closed-in spaces above deck available for cargo, stores, passengers, or crew, with certain minor exceptions. Net or registered tonnage is the gross tonnage less the spaces occupied by the propelling machinery, fuel, crew quarters, master's cabin, and navigation spaces. It represents substantially space available for cargo and passengers. The net tonnage capacity of a ship may bear little relation to weight of cargo. Dead-weight tonnage is the weight in long tons required to depress a vessel from light water line (that is, with only the machinery and equipment on board) to load line. It is, therefore, the weight of the cargo, fuel, etc., which a vessel is designed to carry with safety.

Historical statistics.—Tabular headnotes provide cross-references, where applicable, to *Historical Statistics of the United States, Colonial Times to 1957*. See preface.

No. 968. SCHEDULED AIR CARRIERS—NUMBER, OPERATING REVENUES, AND EXPENSES: 1955 TO 1972

[In millions of dollars, except number of carriers. 1955 not exactly comparable with later years. See also headnote table 972]

ITEM	1955	1960	1965	1968	1969	1970	1971	1972
DOMESTIC								
Number of air carriers ¹	42	42	40	38	33	35	34	34
Revenues.....	1,215	2,129	3,609	5,606	6,857	7,131	7,701	8,588
Passenger.....	1,065	1,860	3,142	4,913	5,943	6,246	6,736	7,565
Mail (including subsidy).....	61	113	158	186	223	205	224	228
Express and freight.....	62	103	220	343	432	461	485	541
Other.....	27	53	89	164	269	219	286	254
Expenses.....	1,091	2,091	3,165	5,298	6,533	7,128	7,444	8,097
Aircraft.....	559	1,043	1,811	2,949	3,647	3,970	4,109	4,388
Flying operations.....	328	601	855	1,505	1,918	2,098	2,235	2,325
Direct maintenance flight equipment.....	138	258	640	912	1,041	1,127	1,125	1,239
Depreciation and amortization of flight equipment.....	93	184	316	532	688	745	749	774
Ground and indirect.....	532	1,048	1,354	2,349	2,886	3,157	3,335	3,759
Net operating income.....	124	38	443	309	324	3	258	491
INTERNATIONAL								
Number of air carriers ¹	9	13	10	9	6	4	4	3
Revenues.....	398	685	1,199	1,950	1,689	1,914	2,081	2,284
Passenger.....	300	528	887	1,309	1,176	1,380	1,484	1,707
Mail (including subsidy).....	30	48	82	127	92	103	90	77
Express and freight.....	33	59	131	186	186	197	221	242
Other.....	35	51	99	328	235	234	286	258
Expenses.....	380	639	1,001	1,748	1,638	1,894	2,050	2,234
Aircraft.....	181	304	509	920	832	944	1,032	1,108
Flying operations.....	115	180	263	495	456	515	573	596
Direct maintenance flight equipment.....	37	58	146	244	219	241	269	300
Depreciation and amortization of flight equipment.....	29	66	100	181	157	188	190	212
Ground and indirect.....	200	336	493	828	806	950	1,018	1,128
Net operating income.....	18	45	198	202	51	19	30	50

¹ Includes all cargo carriers. Each airline counted only in group in which greater portion of its operations prevailed.

Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*, annual. Data from U.S. Civil Aeronautics Board.

Civil Flying

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No. 969. CIVIL FLYING—SUMMARY: 1960 TO 1972

[As of Dec. 31 or for years ending Dec. 31. General aviation flying excludes civil flying performed by public carriers—scheduled, supplemental, contract, or intrastate. See also *Historical Statistics, Colonial Times to 1957*, series Q 376-383 and Q 394-397]

ITEM	1960	1965	1968	1969	1970	1971	1972
Airports in operation ¹	6,881	9,566	10,470	11,050	11,261	12,070	12,405
Public ²	2,780	3,570	3,986	4,155	4,260	4,418	4,481
Private ²	4,101	5,996	6,484	6,895	7,001	7,652	7,924
Lighted airports	2,133	2,878	3,312	3,430	3,554	3,759	3,827
Airports with paved runways	1,893	2,747	3,353	3,650	3,805	4,176	4,390
Miles of Federal airways ³	1,000	141.9	137.4	138.5	140.4	142.2	(NA)
Federal aid to airports: ³							
Cumulative since 1946	mil. dol.	1,184	1,887	2,362	2,447	2,458	3,298
Federal funds	mil. dol.	573	935	1,165	1,198	1,199	1,480
Total civil aircraft ⁴	1,000	111.6	142.1	179.3	190.7	154.5	166.8
Active aircraft	1,000	78.8	97.7	127.2	133.8	134.5	(NA)
Air carriers, total ⁵	1,000	2.2	2.3	2.9	3.0	2.8	2.7
General aviation aircraft	1,000	76.5	95.4	124.2	130.8	131.7	(NA)
Fixed-wing aircraft:							
Multi-engine	1,000	7.2	12.0	16.8	18.1	18.4	17.9
Single-engine:							
4-place and over	1,000	34.3	49.8	61.0	63.7	64.6	64.5
3-place and less	1,000	33.5	31.4	42.8	45.0	44.9	44.8
Rotorcraft	1,000	.6	1.5	2.4	2.6	2.2	2.4
Other	1,000	.4	.8	1.3	1.4	1.6	1.7
Active airman certificates held ⁶	1,000	549	719	972	900	1,022	1,048
Pilot ⁶	1,000	348	480	692	720	733	741
Airline transport	1,000	18	22	29	31	34	36
Commercial	1,000	90	117	164	177	187	192
Private	1,000	139	196	282	299	304	313
Student	1,000	99	139	209	204	196	186
Hours flown (general aviation)	1,000	13,121	16,733	24,053	25,351	26,031	25,512
Business ¹⁰	5,699	5,867	6,976	7,064	7,204	7,141	(NA)
Commercial ¹¹	1,000	2,365	3,348	4,810	4,928	6,849	4,264
Instructional	1,000	1,828	3,346	6,494	7,023	4,524	6,416
Personal	1,000	3,172	4,016	5,532	5,099	6,896	7,252
Other	1,000	57	166	241	337	557	439
Miles flown (general aviation)	1,000	1,760	2,562	3,701	3,926	3,207	3,143
Business ¹⁰	1,000	881	1,204	1,406	1,426	1,134	1,129
Commercial ¹¹	1,000	299	401	666	723	791	507
Instructional	1,000	194	369	814	910	450	651
Personal	1,000	387	512	777	829	763	795
Other	1,000	8	26	37	38	79	62
Fuel consumed (general aviation):							
Gasoline	mil. gal.	242	292	495	522	551	508
Jet fuel	mil. gal.	-	56	115	168	208	(NA)
Domestic air cargo, revenue ton-miles							
flown ¹²	1,000	724	1,661	2,327	2,769	2,581	2,747
Scheduled carriers	1,000	476	1,112	1,775	2,126	2,216	2,278
Nonscheduled carriers ¹³	1,000	135	330	248	365	80	164
Supplemental carriers ¹⁴	1,000	112	220	305	278	285	306
Aircraft accidents ¹⁵	4,883	5,279	5,040	4,830	4,695	4,733	(NA)
Air carrier, exc. commercial operators	90	88	72	63	55	47	(NA)
Fatal	17	9	16	10	8	8	8
Fatalities	499	261	351	158	146	203	190
General aviation	4,703	5,196	4,968	4,767	4,712	4,651	4,228
Fatal	429	538	692	647	641	662	683
Fatalities	787	1,029	1,399	1,495	1,310	1,405	1,400
Hijacking incidents	-	5	35	87	83	58	62
U.S.-registered aircraft	-	4	22	40	27	27	31
Successful	-	1	18	33	18	12	10
Unsuccessful	-	3	4	7	9	15	21
Foreign-registered aircraft	-	1	13	47	56	31	31
Successful	-	-	12	37	37	10	13
Unsuccessful	-	1	1	10	19	21	18

¹ Represents zero. NA. Not available.

² Existing airports and airfields recorded with FAA. Includes military airports with joint civil and military use. Includes Puerto Rico, American Samoa, Canton, Guam, Virgin Islands, and Wake Island.

³ Airport type definitions: Public—public use and public services, public control; Private—(a) public use and public services, private control, and (b) no public services, private control, military control, or Federal Government control. ⁴ Includes outlying areas U.S. ⁵ Includes gliders, dirigibles, and balloons.

⁶ Registered, not necessarily in operation. Includes helicopters.

⁷ Includes autogiros; excludes air carrier helicopters. ⁸ Includes gliders, blimps, and balloons.

⁹ Includes nonpilot technicians and flight instructors, not shown separately.

¹⁰ Includes helicopter, glider, and other pilots, not shown separately.

¹¹ Corporation and individual business transportation, not for hire.

¹² Passenger and cargo transportation for hire, aerial application (crop dusting, spraying, seeding, etc.), patrol, survey, and other miscellaneous work use. ¹³ Comprises express and freight ton-miles.

¹⁴ Includes some military ton-miles and may include a small amount of international traffic.

¹⁵ Civil and military. ¹⁶ Beginning 1968, data not strictly comparable due to change of definition.

Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*, annual. Includes data from U.S. Civil Aeronautics Board and U.S. National Transportation Safety Board.

Transportation—Air and Water

No. 970. CIVIL AIRCRAFT, AND FEDERAL-AID AIRPORT PROGRAM, 1971, AND AIRPORT GRANT-IN-AID PROGRAMS, 1972, BY STATES AND OTHER AREAS

[As of December 31, except as noted]

STATE OR OTHER AREA	1971		Airports, 1972 ³	STATE OR OTHER AREA	1971		Airports, 1972 ³		
	Active aircraft, civil ¹	Federal-aid airport program ² (mil. dol.)			Active aircraft, civil ¹	Federal-aid airport program ² (mil. dol.)			
		Total	Federal funds			Total	Federal funds		
Total	134,547	3,297.7	1,479.9	4,481	7,924	Mo.	2,904	80.4	36.8
Ala.	1,750	43.1	21.2	91	37	Mont.	1,300	27.6	13.3
Alaska	2,554	103.0	57.6	547	219	Nebr.	1,710	38.8	16.6
Ariz.	2,899	42.6	21.7	102	96	N.H.	915	20.3	12.3
Ark.	1,025	30.6	14.0	72	83	N.J.	531	7.4	3.5
Calif.	17,400	257.8	118.7	286	468	N. Mex.	3,085	92.7	33.7
Colo.	2,331	55.7	25.7	74	140	N.Y.	1,330	18.1	9.5
Conn.	1,158	23.0	10.7	15	64	N.C.	5,081	232.2	96.2
Del.	378	4.4	1.8	3	27	N. Dak.	1,030	19.8	8.5
D.C.	18	—	—	5	2	Ohio	5,876	98.4	45.9
Fla.	5,723	143.4	62.5	114	215	Oklahoma	2,878	70.7	32.8
Ga.	3,075	146.9	61.9	109	122	Oreg.	2,440	32.7	16.2
Hawaii	261	48.7	16.5	15	33	Pa.	4,471	150.1	72.3
Idaho	1,151	12.9	6.8	123	46	R.I.	196	10.4	5.2
Ill.	5,761	181.9	80.0	85	664	S.C.	1,093	20.1	9.9
Ind.	3,305	45.7	21.5	65	143	S. Dak.	930	18.9	8.7
Iowa	2,582	44.8	20.5	111	133	Tenn.	1,869	73.2	34.5
Kans.	3,003	24.5	11.4	122	185	Tex.	10,431	311.9	127.3
Ky.	1,044	47.2	22.9	50	26	Utah	749	29.4	15.8
La.	2,252	66.9	29.5	70	190	Vt.	238	5.3	2.5
Maine	633	12.1	5.8	44	109	Va.	1,924	57.0	24.3
Md.	1,814	23.4	11.4	21	78	Wash.	3,487	47.8	22.2
Mass.	1,907	57.9	26.6	27	90	W. Va.	692	29.4	13.0
Mich.	5,526	106.7	44.7	130	253	Wis.	2,608	57.9	26.1
Minn.	3,404	63.6	29.0	141	135	Wyo.	605	9.6	5.4
Miss.	1,479	35.8	16.1	70	64	Other areas ⁴	847	49.3	23.7

¹ Represents zero. ² Includes gliders, dirigibles, and balloons.³ Cumulative since enactment of Federal Airport Act, May 16, 1946, through Dec. 31, 1971.⁴ Includes military airports with joint civil and military use.⁴ Comprises Puerto Rico, American Samoa, Canton, Guam, Virgin Islands, Wake Island, and foreign.Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*, annual.No. 971. SCHEDULED AIR CARRIERS—AVAILABLE SERVICE AND TRAFFIC CARRIED:
1950 TO 1973

[In millions, except percent]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973
Revenue ton-miles, all services	1,398	3,088	5,024	9,895	20,186	20,906	22,805	23,928
Revenue ton-miles, scheduled service	1,359	2,982	4,729	8,985	18,166	18,685	20,746	22,242
Passenger ¹	1,014	2,397	3,777	6,672	13,171	13,665	15,241	16,196
U.S. mail	69	143	241	483	1,470	1,314	1,190	1,198
Foreign mail	5	8	9	10	10	11	11	11
Express	38	51	59	90	107	83	87	100
Freight	233	383	643	1,730	3,408	3,712	4,217	4,737
Revenue ton-miles, charter (passenger and cargo)	40	106	296	909	2,020	2,221	2,059	1,686
Available ton-miles, all services	2,426	5,280	9,384	19,661	44,298	47,256	48,680	51,444
Ton-mile load factor ² percent	57.6	58.4	53.5	50.3	45.6	44.2	46.8	46.5
Revenue passenger-miles, scheduled service	10,243	24,351	38,863	68,676	131,710	135,658	152,406	161,957
Available seat-miles, scheduled service	16,842	38,574	65,567	124,320	265,120	279,823	287,411	310,597
Passenger load factor percent	60.8	63.1	59.3	55.2	49.7	48.5	53.0	52.1
Revenue plane-miles, scheduled service	477	780	998	1,354	2,418	2,378	2,376	2,448

¹ A passenger ton-mile represents 1 ton of passenger weight, including free and excess baggage, transported 1 mile.Source: Air Transport Association of America, Washington, D. C., *Air Transport Facts and Figures*, annual.
Data from Civil Aeronautics Board.

Scheduled Air Carriers

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No. 972. SCHEDULED AIR CARRIERS—SUMMARY OF OPERATIONS: 1950 TO 1973

[As of Dec. 31 or for calendar years, except as noted. Operations between conterminous U.S. and Hawaii (through 1965), Puerto Rico, and outlying areas included with International. Intra-Alaska included with domestic carriers and Mainland-Alaska with international, as follows: Number of operators and traffic data, through 1965; fuel and financial data, 1955-1965; and personnel data, 1960 and 1965. Beginning 1970, Alaska, and Hawaii included in domestic. See also *Historical Statistics, Colonial Times to 1957*, series Q 352, Q 354-362, and Q 384-393.]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973
Domestic operators ¹	48	40	39	40	33	34	34	32
International operators ¹	6	7	10	9	3	4	3	1
Total personnel employed ² 1,000	83	122	163	207	201	285	305	(NA)
Domestic	1,000	62	96	134	170	242	240	259 (NA)
International	1,000	21	27	29	37	49	45	(NA)
Route miles in operation ³ 1,000	184	196	250	248	377	385	379	(NA)
Domestic	1,000	77	79	101	105	172	180	173 (NA)
International	1,000	106	117	148	143	206	205	206 (NA)
Aircraft in operation ⁴	1,220	1,409	1,867	1,896	2,890	2,380	2,361	(NA)
Fixed wing	1,200	1,390	1,842	1,875	2,374	2,375	2,347	2,360
Four-engine		679	1,180	1,055	908	879	793	735
Three-engine turbojet		(NA)	(NA)	183	627	651	738	844
Twin-engine		709	677	615	825	831	803	766
Single-engine		2	5	37	14	14	13	15
Average available seats: ⁵								
Domestic	37.5	51.2	65.5	80.2	110.4	115.3	118.1	123.8
International	41.0	56.4	80.9	129.1	154.9	184.0	100.8	201.5
Average speed (miles per hour):								
Domestic	180	208	235	314	350	405	404	405
International	218	244	307	451	482	482	480	481
Fuel consumed:								
Gasoline mil. gal.	572	1,170	1,127	489	14	12	13	(NA)
Domestic mil. gal.	418	912	922	443	14	12	12	(NA)
International mil. gal.	154	268	205	41	-	-	1	(NA)
Jet fuel:								
Domestic mil. gal.	-	2	988	3,368	7,783	7,728	7,886	(NA)
International mil. gal.	-	-	348	1,195	2,014	2,113	2,099	(NA)
Revenue-miles flown (all scheduled services) mil.	464	763	983	1,336	2,419	2,378	2,376	2,448
Domestic mil.	370	627	821	1,088	2,028	2,004	2,000	2,058
International mil.	95	135	163	248	391	374	376	300
Revenue passengers carried mil.	19	42	62	103	169	173	191	202
Domestic mil.	17	38	56	92	153	166	172	183
International mil.	2	3	6	11	16	17	19	19
Revenue passenger-miles flown:								
Domestic mil.	8,007	19,852	30,567	51,887	104,147	106,438	118,138	126,817
International mil.	2,214	4,499	8,306	16,780	27,563	29,210	34,268	35,640
Average passenger-mile rate:								
Domestic dollars	.055	.054	.061	.061	.060	.063	.064	(NA)
International dollars	.073	.067	.064	.058	.050	.051	.050	(NA)
Express and freight, ton-miles flown mil.	213	326	579	1,540	2,908	3,023	3,354	4,370
Domestic mil.	152	230	387	943	1,966	2,013	2,240	2,454
International mil.	61	96	192	597	942	1,010	1,114	1,916
Mail, ton-miles flown:								
Domestic mil.	48	89	136	226	706	697	677	658
International mil.	26	61	108	254	549	457	372	361
Accidents (revenue operations): ⁶								
Domestic, total	30	41	62	55	31	33	37	(NA)
Fatal	4	8	10	6	1	6	6	(NA)
Fatalities ¹⁰	100	221	363	223	1	194	185	(NA)
Passenger-fatalities per 100 million passenger-miles flown ¹¹	1.2	0.8	0.9	0.4	-	0.15	0.13	(NA)
International, total	5	5	5	8	8	8	6	(NA)
Fatal	2	1	2	1	1	-	1	(NA)
Fatalities ¹⁰	56	4	15	30	2	-	1	(NA)
Passenger-fatalities per 100 million passenger-miles flown	2.1	(Z)	0.1	0.1	(Z)	-	-	(NA)

¹ Represents zero. NA Not available. Z Less than 0.05. ⁴ Excludes all-cargo operators. Beginning 1971, includes non-scheduled operators.

² For types of personnel, see table 973. ⁵ Not compiled for intra-Alaska prior to 1970.

³ As of Dec. 31, based on fourth quarter.

⁴ Represents aircraft of the certified route air carriers; excludes those used for crew training and general utility purposes, or held for disposal. Beginning 1960, excludes aircraft operated by the scheduled all-cargo carriers. Includes helicopters, not shown separately.

⁶ Obtained by dividing passenger seat-miles by revenue-miles flown in passenger service.

⁷ Excludes freight flown by certificated all-cargo operators and irregular carriers.

⁸ Beginning 1960, includes military contract operations.

⁹ Includes midair collisions nonfatal to air carrier occupants; excluded in computation of fatal accidents.

¹⁰ Includes crew members.

¹¹ Excludes passenger deaths occurring in dynamite accidents, as follows: Nov. 1, 1965, 39; Jan. 6, 1960, 29.

Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*, annual. Includes data from U.S. Civil Aeronautics Board.

No. 973. SCHEDULED AIR CARRIERS—PERSONNEL AND PAYROLL: 1965, 1970, AND 1972

[As of December 31 or for calendar years. See also headnote, table 972]

TYPE OF PERSONNEL	1965			1970			1972		
	Number (1,000)	Payroll (mil. dol.)	Aver- age salary	Num- ber (1,000)	Payroll (mil. dol.)	Aver- age salary	Num- ber (1,000)	Payroll (mil. dol.)	Aver- age salary
	170.0	1,449	\$8,525	242.2	3,085	\$12,737	251.8	3,582	\$14,228
Total domestic¹									
Pilots and copilots	14.5	289	10,946	22.8	685	34,348	24.1	789	32,716
Other flight personnel	3.9	53	13,468	5.9	130	21,999	5.4	122	22,688
Purser, stewards, stewardesses	14.2	73	5,144	28.7	210	7,333	33.8	303	8,988
Communications personnel	2.0	13	6,448	1.7	16	9,157	1.3	14.1	10,853
Mechanics ²	35.4	282	7,985	41.4	507	12,237	39.9	562	14,082
Aircraft and traffic servicing	45.8	331	7,223	66.4	714	10,748	72.7	806	12,333
Office employees	34.6	239	6,924	47.0	469	9,987	47.7	535	11,209
Total international¹	36.9	269	7,294	48.5	495	10,194	44.6	530	11,881
Pilots and copilots	1.9	42	21,758	2.3	81	34,455	2.1	80	37,720
Other flight personnel	0.8	13	17,110	1.0	26	25,275	1.0	28	26,985
Purser, stewards, stewardesses	3.0	19	6,287	4.9	43	8,696	5.7	62	11,016
Communications personnel	1.1	5	4,295	1.0	7	6,539	.8	6	7,315
Mechanics ²	5.3	42	7,853	6.1	63	10,416	4.8*	68	14,242
Aircraft and traffic servicing	10.8	61	5,698	14.9	117	7,856	14.5	118	8,187
Office employees	9.0	53	5,919	11.9	95	8,016	9.8	95	9,743

¹ Includes personnel not shown separately. ² Includes other maintenance personnel.Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*, annual. Includes data from U.S. Civil Aeronautics Board.

No. 974. SUPPLEMENTAL AIR CARRIERS—SUMMARY OF OPERATIONS: 1955 TO 1972

[Refers to carriers operating by authority of letters of registration granted by the Civil Aeronautics Board. Includes international operations; see headnote, table 972. Figures shown for military cover activities performed under charter or other contract with the Department of Defense]

ITEM	1955	1960	1965	1968	1969	1970	1971	1972
Number of operators.....	1,000	50	30	13	13	14	14	13
Revenue passenger-miles.....	mill.	1,306	2,208	2,489	8,886	11,145	10,280	10,573
Commercial.....	mill.	716	671	1,066	4,332	6,075	6,044	7,772
Military.....	mill.	680	1,537	1,420	4,554	5,070	4,245	2,204
Revenue cargo ton-miles.....	mill.	75	120	298	446	449	391	501
Commercial.....	mill.	21	5	49	62	90	77	86
Military.....	mill.	53	115	249	384	359	314	371
Operating revenue.....	mill. dol.	76.8	88.4	141.0	325.5	361.4	337.2	368.8
Operating expenses.....	mill. dol.	73.1	85.3	116.9	282.3	356.2	330.7	326.8
Operating profit or loss.....	mill. dol.	3.8	-1.8	24.1	43.2	5.3	6.5	4.3

Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*, annual. Data from U.S. Civil Aeronautics Board.

No. 975. EMPLOYMENT, HOURS, AND EARNINGS IN AIRCRAFT INDUSTRIES—ANNUAL AVERAGES: 1950 TO 1972

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
Employment, total.....	1,000	283	761	674	619	805	690	545
Aircraft.....	1,000	188	467	371	330	479	388	298
Aircraft engines and parts.....	1,000	57	168	171	188	196	180	153
Other aircraft parts and equipment.....	1,000	38	127	132	101	130	122	95
Hours and earnings:								
Average weekly hours:								
Aircraft industries.....		41.4	41.4	40.6	41.2	41.9	41.0	41.7
Aircraft engines and parts industries.....		41.7	40.6	41.1	42.1	40.9	40.5	39.8
Average weekly earnings:								
Aircraft industries.....		\$67	\$90	\$110	\$130	\$163	\$171	\$179
Aircraft engines and parts industries.....		\$69	\$86	\$112	\$133	\$158	\$166	\$174
Average hourly earnings:								
Aircraft industries.....		\$1.62	\$2.17	\$2.71	\$3.16	\$3.90	\$4.17	\$4.36
Aircraft engines and parts industries.....		\$1.66	\$2.13	\$2.73	\$3.17	\$3.87	\$4.10	\$4.70

Source: U.S. Federal Aviation Administration, *FAA Statistical Handbook of Aviation*, annual. Data from U.S. Bureau of Labor Statistics.

Aircraft

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No. 976. CIVIL AIRCRAFT SHIPMENTS: 1950 TO 1972

[Represents manufacturers' shipments of complete aircraft. Includes both domestic and export output]

ITEM	1950	1955	1960	1965	1967	1968	1969	1970	1971	1972
Total.....	3,520	4,820	8,181	12,646	14,479	14,969	13,600	8,190	8,143	10,523
Transports.....	129	113	238	221	500	702	600	313	230	230
General aviation.....	3,391	4,663	7,726	12,053	13,536	13,749	12,581	7,381	7,450	9,765
Single-engine:										
1-to 3-place.....	(NA)	786	1,366	3,545	4,873	4,507	4,447	1,981	1,948	2,398
4-place and over.....	(NA)	2,969	5,072	6,478	6,657	6,972	5,746	4,048	4,329	5,500
Multimotor.....	(NA)	808	1,288	2,030	2,006	2,270	2,388	1,352	1,173	1,887
Rotorcraft.....	(NA)	144	217	372	443	518	510	496	463	528

NA Not available.

Source: U.S. Federal Aviation Administration, *F.A.A. Statistical Handbook of Aviation*, annual. Includes data from U.S. Bureau of the Census, *Current Industrial Reports*.

No. 977. AIRCRAFT—BACKLOG, NEW ORDERS, AND SALES: 1965 TO 1972

[Reported by manufacturers of complete aircraft, aircraft engines, and propellers]

ITEM	1965		1970		1971		1972	
	Total (mil. dol.)	Percent military	Total (mil. dol.)	Percent military	Total (mil. dol.)	Percent military	Total (mil. dol.)	Percent military
Net new orders.....	22,183	53.2	21,161	67.5	21,553	70.7	23,842	62.1
Aircraft and parts ¹	7,951	44.4	7,887	62.7	7,781	68.4	8,812	51.0
Aircraft engines and parts.....	2,690	66.8	1,955	73.0	2,173	66.8	2,693	47.0
Missiles and parts.....	6,730	52.0	5,611	80.7	5,229	77.2	6,090	76.2
Other products and services.....	4,803	(X)	5,708	(X)	6,365	(X)	6,247	(X)
Net sales.....	17,016	50.2	24,752	62.5	21,679	65.1	21,499	62.8
Aircraft and parts ¹	5,343	63.5	10,357	54.8	9,046	54.8	7,751	47.3
Aircraft engines and parts.....	1,714	66.0	3,109	61.5	2,346	58.0	2,402	58.6
Missiles and parts.....	5,819	52.4	5,422	70.7	4,971	77.2	5,598	78.3
Other products and services.....	4,140	(X)	5,864	(X)	5,316	(X)	3,748	(X)
Backlog, Dec. 31.....	20,385	57.5	24,705	50.5	24,579	56.9	26,922	56.9
Aircraft and parts ¹	8,855	50.2	13,264	35.2	11,999	40.6	13,060	43.7
Aircraft engines and parts.....	2,503	65.8	2,450	51.0	2,251	59.0	2,572	51.4
Missiles and parts.....	5,480	57.7	4,522	80.1	4,780	85.6	5,272	82.5
Other products and services.....	3,517	(X)	4,474	(X)	5,519	(X)	6,018	(X)

X Not applicable. ¹ Includes propeller and propeller parts.

Source: U.S. Bureau of the Census, *Current Industrial Reports*, series MQ-370.

No. 978. AIRCRAFT AND AIRCRAFT PARTS AND ACCESSORIES—EXPORTS: 1960 TO 1972

[Value in millions of dollars. See *Historical Statistics, Colonial Times to 1957*, series Q 349-350, for number and value of aircraft exported]

ITEM	1960		1965		1970		1972	
	Number of units	Value	Number of units	Value	Number of units	Value	Number of units	Value
Aircraft, parts, and accessories.....	(X)	1,329	(X)	1,798	(X)	3,053	(X)	3,494
Commercial and civilian aircraft ¹	2,336	537	3,129	477	2,940	1,528	3,042	1,599
Cargo transports, new.....	—	—	4	15	7	32	17	4
Passenger transports, new.....	(NA)	(NA)	61	262	149	1,059	96	1,003
Passenger/cargo combinations, new.....	(NA)	(NA)	12	76	28	192	20	103
Personal and utility type:								
Single engine, new.....	1,527	24	2,031	31	1,403	32	1,546	35
Multiple engine, new.....			420	38	544	81	536	96
Rotary wing, new.....	82	8	177	16	335	28	256	53
Used, rebuilt, modified, or converted ²	565	26	406	39	358	104	450	299
Internal combustion engines, new.....	1,464	4	1,684	7	2,340	12	2,089	14
Aircraft engines, used.....	1,558	10	1,273	10	816	7	1,142	11
Aircraft components, parts, and access.....	(X)	778	(X)	1,303	(X)	1,506	(X)	1,870

¹ Represents zero. NA Not available. X Not applicable.

² Through 1965, includes new aircraft not elsewhere classified, not shown separately.

² Aircraft only; includes aircraft changed from military to nonmilitary type.

Source: U.S. Bureau of the Census, *Current Industrial Reports*, series M37G.

Transportation—Air and Water

No. 979. AIRBORNE IMPORTS AND EXPORTS—SHIPPING WEIGHT, AND VALUE: 1965, 1970, AND 1972

[Weight in millions of pounds, value in millions of dollars, except as indicated. Includes trade of Puerto Rico]

CONTINENT AND CUSTOMS DISTRICT	IMPORTS						EXPORTS					
	Weight			Value			Weight			Value		
	1965	1970	1972	1965	1970	1972	1965	1970	1972	1965	1970	1972
All carriers ¹	192.3	620.3	931.4	1,316	3,417	5,159	457.3	897.0	1,081.2	2,289	6,086	7,516
North America	83.1	85.8	101.7	125	316	386	127.3	224.5	253.1	366	795	936
South America	19.8	43.3	82.3	48	98	174	71.3	95.5	127.2	194	412	568
Europe	111.5	353.7	488.1	920	2,069	3,013	182.0	428.9	495.9	1,284	3,459	4,119
Asia	26.7	131.2	247.3	171	850	1,416	29.1	107.5	154.3	236	1,056	1,561
Australia, Oceania	0.4	3.4	6.2	6	23	37	5.0	16.0	19.2	52	135	178
Africa	0.8	3.2	5.0	11	48	113	7.4	18.9	20.6	38	125	155
U.S. carriers ¹	95.7	288.3	416.2	586	1,667	1,489	175.6	324.0	371.3	867	2,215	1,684
Percent of all	50.0	46.5	44.7	44.5	48.8	28.9	38.4	36.1	34.3	37.9	36.4	22.4
North America	15.7	39.1	40.5	56	140	167	56.5	91.9	99.2	147	367	438
South America	6.4	18.4	36.6	22	51	77	19.2	33.0	38.9	64	119	153
Europe	55.6	148.5	194.2	392	907	406	68.8	145.7	152.7	446	1,210	276
Asia	17.6	80.7	139.4	111	542	794	15.1	44.4	67.6	106	459	681
Australia, Oceania	(Z)	0.9	3.7	2	12	19	1.1	2.9	4.7	10	29	46
Africa	0.3	0.7	1.9	3	16	26	3.0	3.8	3.6	16	30	34
Customs district:												
New York	113.1	294.3	444.2	977	1,851	2,622	224.8	397.9	443.0	1,396	3,229	3,892
Florida	26.7	61.0	85.2	48	92	164	116.1	125.3	155.4	214	351	474
Los Angeles	7.4	39.6	81.7	56	342	669	9.4	48.3	60.9	97	619	755
San Francisco	10.3	42.9	66.8	68	333	480	16.9	31.7	38.6	159	361	498
Chicago	10.0	32.2	49.0	65	243	347	26.8	66.7	94.1	138	408	578
Other	24.8	150.3	204.4	101	556	869	63.4	227.0	289.2	286	1,119	1,319

Z Less than 50,000 pounds. ¹ Export data for all carriers and U.S. carriers include shipments of Special Category commodities, not shown separately by continent.

Source: U.S. Bureau of the Census, *United States Airborne Foreign Trade*, FT 936, annual.

No. 980. UNITED STATES RECEIPTS AND PAYMENTS FOR INTERNATIONAL TRANSPORTATION: 1950 TO 1973

In millions of dollars. Data are international transportation transactions recorded for balance of payment purposes (see table 1,308). Receipts include freight on exports carried by U.S. operated carriers and foreign carrier expenditures in U.S. ports. Payments include freight on imports carried by foreign carriers and U.S. carrier port expenditures abroad. Freight on exports carried by foreign carriers is excluded since such payments are directly or indirectly for foreign account. Similarly, freight on U.S. imports carried by U.S. carriers is a domestic rather than an international transaction. Minus sign (—) denotes excess of payments over receipts. See *Historical Statistics, Colonial Times to 1967*, series U 170 and U 177, for totals]

ITEM	1950	1955	1960	1965	1968	1969	1970	1971	1972	1973 (prel.)
Total receipts	1,033	1,406	1,782	2,414	2,959	3,102	3,657	3,894	4,321	5,480
Ocean transportation	859	1,137	1,337	1,731	1,909	1,933	2,246	2,270	2,451	3,204
Export freight earnings	380	448	428	519	547	510	604	554	608	870
Freight earnings on shipments between foreign countries	110	106	136	153	143	134	209	196	203	219
Passenger fares	20	23	19	9	7	8	3	1	1	(Z)
Port expenditures	313	548	746	1,041	1,206	1,270	1,394	1,474	1,603	2,046
Charter hire	36	12	8	9	6	11	36	45	36	69
Air transportation	108	183	358	571	915	1,016	1,240	1,431	1,651	2,083
Export freight earnings	17	33	55	91	127	142	187	202	235	276
Passenger fares	68	97	156	262	405	443	541	614	693	972
Port expenditures	23	53	147	219	383	431	512	615	723	785
Other transportation	66	86	87	112	135	153	171	193	219	243
Total payments	818	1,204	1,915	2,675	3,252	3,536	4,031	4,368	5,024	5,794
Ocean transportation	643	946	1,333	1,806	2,026	2,065	2,353	2,468	2,802	3,377
Import freight payments	295	480	780	1,083	1,269	1,281	1,420	1,610	1,860	2,221
Passenger fares	121	138	212	210	190	215	245	236	264	284
Port expenditures	138	153	167	281	289	264	313	289	313	434
Charter hire	89	176	174	232	278	305	375	383	365	438
Air transportation	106	183	504	776	1,137	1,381	1,581	1,792	2,109	2,297
Import freight payments	2	7	22	40	79	109	115	158	172	213
Passenger fares	26	68	301	510	695	865	970	1,054	1,316	1,366
Port expenditures	78	108	181	225	363	407	496	580	621	718
Other transportation	69	75	78	93	89	90	97	108	113	120
Receipts balance	215	202	-133	-261	-293	-434	-374	-474	-703	-313

Z Less than \$500,000.

Source: U.S. Bureau of Economic Analysis, *Survey of Current Business* monthly.

Exports and Imports

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No. 981. WATERBORNE COMMERCE, FOREIGN AND DOMESTIC—CARGO TONNAGE: 1950 TO 1972

[In millions of short tons. Includes Puerto Rico and outlying areas. Import and export figures differ slightly from those shown in tables 983 and 984, due to minor differences in basic concepts which are explained in the source. See also *Historical Statistics, Colonial Times to 1957*, series Q 216-229.]

CLASS	1950	1955	1960	1965	1969	1970	1971	1972
Net total	821	1,016	1,100	1,273	1,449	1,532	1,513	1,617
Foreign commerce	169	271	339	444	521	581	566	630
Imports, through seaports.....	96	144	198	245	296	313	334	372
Exports, through seaports.....	44	95	105	142	189	206	173	197
Imports, Great Lakes ports.....	6	9	13	25	25	26	26	25
Exports, Great Lakes ports.....	24	23	23	32	32	36	33	35
Domestic commerce ¹	651	745	761	829	927	951	947	987
Coastwise, between ports.....	183	196	209	202	217	238	243	243
Great Lakes, between ports.....	170	185	155	154	161	157	141	145
Local traffic of seaports, Great Lakes ports, and inland waterways ports.....	107	113	104	103	88	81	81	90
Traffic between ports and river ports.....	191	250	201	370	461	472	479	507
Traffic between ports of outlying areas of the United States.....	1	2	1	1	1	2	2	2

¹ Represents traffic among ports and communities mainly utilizing inland waterways.

Source: 1950, U.S. Corps of Engineers, *Annual Report of Chief of Engineers*, Part 2; thereafter, *Waterborne Commerce of the United States*, annual.

No. 982. EXPORTS AND IMPORTS, BY METHOD OF TRANSPORT: 1955 TO 1973

[Value in millions of dollars, except percent; shipping weight in millions of pounds. Export data include both domestic and foreign; import data for general imports only. For details, see source]

ITEM	1955	1960	1965	1969	1970	1971	1972	1973
EXPORTS								
Value, all methods of transport.....	15,547	20,570	27,470	38,006	43,224	44,130	49,778	71,314
Vessel.....	9,227	13,142	16,926	20,072	24,627	23,640	26,489	40,558
Percent of total.....	59.4	63.9	61.6	52.8	57.0	53.6	53.2	56.9
Air.....	(NA)	(NA)	2,289	5,128	5,933	6,431	7,627	10,430
Shipping weight:								
Vessel.....	225,169	248,456	343,461	398,597	480,540	408,891	460,784	549,310
Air.....	(NA)	(NA)	457	860	891	907	1,081	1,378
IMPORTS								
Value, all methods of transport.....	11,384	14,654	21,364	36,043	39,952	45,563	55,563	69,121
Vessel.....	8,073	11,106	14,943	21,627	24,778	27,044	33,673	42,602
Percent of total.....	70.9	75.8	69.9	60.0	62.0	59.4	60.6	61.6
Air.....	(NA)	(NA)	1,316	3,190	3,417	4,054	5,160	6,030
Shipping weight:								
Vessel.....	283,069	398,085	511,509	577,711	598,393	626,208	701,866	875,217
Air.....	(NA)	(NA)	192	614	620	828	931	1,002

NA. Not available.

Source: U.S. Bureau of the Census, *Highlights of U.S. Export and Import Trade*, FT 990, monthly, and unpublished data.

No. 983. WATERBORNE IMPORTS AND EXPORTS—CARGO TONNAGE, BY COASTAL DISTRICT: 1950 TO 1972

[In thousands of short tons. See headnote, table 984]

DISTRICT	1950	1955	1960	1965	1968	1969	1970	1971	1972
IMPORTS									
Atlantic ports.....	76,062	105,990	135,313	163,871	180,813	188,589	218,544	221,270	249,782
Gulf ports.....	10,930	17,345	27,304	36,773	41,544	43,482	46,904	51,782	54,182
Pacific ports.....	4,095	9,088	23,281	29,995	28,292	31,957	30,846	39,255	46,724
Great Lakes ports.....	5,616	8,751	12,932	24,957	32,100	24,643	26,448	25,986	25,209
EXPORTS									
Atlantic ports.....	15,228	54,906	44,902	54,943	53,265	62,987	79,303	59,768	62,913
Gulf ports.....	16,818	22,500	36,730	58,717	66,742	63,217	78,092	74,337	89,584
Pacific ports.....	7,270	13,394	19,351	26,445	39,146	41,018	47,578	37,664	43,955
Great Lakes ports.....	23,370	21,998	22,905	31,705	30,330	32,064	35,932	33,482	34,988

Source: U.S. Bureau of the Census, *Foreign Commerce and Navigation of the United States*; *U.S. Waterborne Foreign Trade*, FT 985, annual; and unpublished data.

No. 984. WATERBORNE IMPORTS AND EXPORTS—CARGO TONNAGE, BY FLAG OF CARRIER VESSEL: 1950 TO 1972

[In millions of short tons. Excludes commodities classified for security reasons as "Special Category", and exports by Dept. of Defense (grant-aid shipments). Beginning 1955, imports exclude shipments under 2,000 lb. shipping weight. For further details, see source report FT 985. See also *Historical Statistics, Colonial Times to 1957*, series Q 210-215.]

YEAR	Total trade	Percent by U.S. flag	IMPORTS BY FLAG OF CARRIER VESSEL				EXPORTS BY FLAG OF CARRIER VESSEL			
			Total	U.S.	Foreign	Percent U.S.	Total	U.S.	Foreign	Percent U.S.
TOTAL										
1950	150	39.3	97	42.3	54	43.7	63	20.4	42	32.5
1955	254	23.5	141	37.4	104	26.5	113	22.1	91	19.6
1960	323	12.3	199	19.6	179	9.9	124	20.1	104	16.3
1965	427	8.1	256	15.6	240	6.1	172	19.0	153	11.1
1968	477	6.1	283	16.3	266	5.8	194	15.6	179	8.0
1969	488	4.9	289	11.0	278	3.8	199	13.1	186	6.6
1970	530	5.6	299	15.4	284	5.1	240	14.0	225	6.3
1971	517	5.6	313	16.4	297	5.2	204	12.8	191	6.3
1972	581	5.0	351	15.7	335	4.5	230	13.2	217	5.8
DRY CARGO										
1950	100	31.2	47	14.8	32	31.8	54	16.4	37	30.7
1955	168	23.2	68	19.9	49	29.0	101	19.8	81	19.6
1960	202	15.2	95	13.8	81	14.6	108	17.0	91	15.8
1965	274	9.3	123	10.4	113	8.4	151	15.2	135	10.0
1968	316	7.1	138	10.4	127	7.6	178	13.3	165	7.4
1969	314	5.8	132	6.8	125	5.1	182	11.3	171	6.2
1970	358	6.4	138	9.9	128	7.2	220	12.9	207	5.8
1971	326	5.8	138	8.1	130	5.9	187	10.9	176	5.8
1972	351	5.1	140	8.0	132	5.7	211	10.0	201	4.7
TANKER CARGO										
1950	59	53.0	50	27.4	23	54.8	9	4.0	5	43.4
1955	85	23.5	73	17.6	55	24.2	12	2.4	10	19.8
1960	120	7.5	104	5.8	98	5.6	16	3.2	13	19.3
1965	153	5.9	132	5.2	127	3.9	21	3.8	17	18.0
1968	162	5.0	145	5.9	130	4.1	16	2.3	14	14.1
1969	174	3.4	157	4.2	153	2.7	17	1.7	15	10.2
1970	181	4.2	161	5.5	156	3.4	20	2.0	18	10.3
1971	192	5.3	175	8.3	167	4.7	17	1.9	15	11.1
1972	230	4.8	211	7.8	203	3.7	19	3.3	16	17.1

Source: U.S. Bureau of the Census, *Foreign Commerce and Navigation of the United States*; U.S. Waterborne Foreign Trade, FT 985 annual; and unpublished data.

No. 985. WATERBORNE IMPORTS AND EXPORTS—VALUE OF TRADE, BY COASTAL DISTRICT: 1965, 1970, AND 1972

[In millions of dollars. Excludes exports by Dept. of Defense (grant-aid shipments). Includes trade of Puerto Rico with foreign countries]

DISTRICT AND TYPE OF VESSEL	TOTAL TRADE			IMPORTS			EXPORTS		
	1965	1970	1972	1965	1970	1972	1965	1970	1972
Total	31,868	49,122	59,139	14,941	24,728	33,618	16,927	24,394	25,521
Atlantic	18,132	26,960	32,188	9,743	15,016	20,137	8,389	11,944	12,051
Dry cargo	16,570	24,970	29,240	8,266	13,189	17,385	8,304	11,781	11,855
Tanker	1,562	1,990	2,948	1,477	1,827	2,752	85	163	196
Gulf	6,739	9,737	12,060	1,761	2,892	4,057	4,978	6,895	8,003
Dry cargo	5,584	8,674	10,753	1,657	2,678	3,685	3,927	5,996	7,068
Tanker	1,136	1,113	1,807	105	214	372	1,051	899	935
Pacific	4,789	9,628	11,505	2,410	5,485	7,615	2,379	4,143	3,890
Dry cargo	4,363	9,237	10,878	2,097	5,231	7,136	2,256	4,006	3,742
Tanker	436	391	627	313	254	479	123	137	148
Great Lakes	2,209	2,746	3,886	1,028	1,335	1,809	1,181	1,411	1,577
Dry cargo	2,141	2,694	3,326	1,013	1,321	1,781	1,128	1,373	1,545
Tanker	68	52	60	15	14	28	53	38	32

Source: U.S. Bureau of the Census, *U.S. Waterborne Foreign Trade*, FT 985, annual.

Inland Waterways

585

No. 986. FREIGHT CARRIED ON INLAND WATERWAYS, BY SYSTEM: 1950 TO 1972
 [In millions of ton-miles. Excludes Alaska and Hawaii, except as noted. Includes waterways, canals, and connecting channels]

SYSTEM	1950	1955	1960	1965	1969	1970	1971	1972
Total	163,344	216,503	220,253	262,421	302,901	318,560	315,030	338,693
Atlantic coast waterways	6,497	27,042	28,583	27,781	26,603	28,572	28,620	29,239
Gulf coast waterways	1,229	13,860	16,932	21,808	27,808	28,582	30,473	32,513
Pacific coast waterways ¹	1,686	4,736	6,001	6,630	8,061	8,397	8,525	9,549
Mississippi River System ²	33,598	52,019	69,257	96,593	125,195	138,534	142,385	158,453
Great Lakes System	120,334	118,850	99,480	103,600	115,235	114,475	105,027	108,939

¹ Beginning 1960, includes Alaskan waterways.

² Comprises main channels and all tributaries of the Mississippi, Illinois, Missouri, and Ohio Rivers.

Source: U.S. Corps of Engineers, 1950, *Annual Report of the Chief of Engineers*, Part 2; thereafter, *Waterborne Commerce of the United States*, annual.

No. 987. FREIGHT CARRIED ON GREAT LAKES SYSTEM, 1969 TO 1972, AND BY AREA, 1972

[In millions of ton-miles]

AREA	Total	DOMESTIC				FOREIGN	
		Lake-wise	Coast-wise	Internal	Local	Canadian	Overseas
1969	115,235	82,569	71	562	98	21,250	10,675
1970	114,475	79,400	57	581	92	23,842	10,503
1971	103,027	70,373	35	553	104	19,531	14,381
Total, 1972	103,939	73,126	41	576	108	19,849	15,238
Lake Superior	26,025	22,670	—	—	(Z)	1,708	1,646
St. Marys River	4,767	4,124	—	—	(Z)	373	270
Lake Michigan, including Port of Chicago ¹	19,550	14,471	2	511	88	2,659	1,820
Lake Huron	23,430	17,750	(Z)	1	5	3,321	2,352
St. Clair River, including channels in Lake St. Clair	5,784	4,401	(Z)	(Z)	—	810	573
Detroit River	3,206	2,314	1	1	2	519	368
Lake Erie, including upper Niagara River	16,310	7,318	16	25	12	5,483	3,455
Welland Canal	1,154	11	2	5	—	707	429
Lake Ontario, including lower Niagara River	5,321	56	12	30	(Z)	2,680	2,543
St. Lawrence River, between International Boundary Line and Lake Ontario	3,891	11	8	2	—	1,587	1,782

[—] Represents zero. ^Z Less than 500,000 ton-miles.

¹ Comprises Chicago Harbor, North Branch, South Branch, Sanitary Ship Canal, Calumet-Sag Channel, Lake Calumet, and Calumet Harbor and River.

Source: U.S. Corps of Engineers, *Waterborne Commerce of the United States*, annual.

No. 988. FREIGHT CARRIED ON MISSISSIPPI RIVER SYSTEM: 1950 TO 1972
 [Net traffic. Comprises main channels and all tributaries of the Mississippi, Illinois, Missouri, and Ohio Rivers]

ITEM	1950	1955	1960	1965	1969	1970	1971	1972
Traffic (mil. short tons):								
Total	138	194	234	302	369	391	396	420
Inland	116	164	188	238	287	297	303	327
Coastwise	14	16	22	28	39	44	44	34
Foreign: Imports	4	6	11	13	16	17	19	19
Exports	5	8	13	23	27	34	30	40
Traffic (bil. ton-miles):								
Total	33.6	52.0	69.3	96.6	125.2	138.5	142.4	158.5
Inland	30.3	47.4	62.4	87.4	114.0	125.9	129.8	144.4
Coastwise	2.1	2.5	3.2	3.6	4.6	4.9	5.1	4.9
Foreign: Imports	0.6	1.0	1.8	2.3	2.7	2.8	3.2	3.3
Exports	0.6	1.1	1.9	3.3	3.9	4.9	4.4	5.8

Source: U.S. Corps of Engineers, 1950, *Annual Report of the Chief of Engineers*, Part 2; thereafter, *Waterborne Commerce of the United States*, annual.

No. 989. COMMERCE OF SELECTED UNITED STATES COASTAL PORTS: 1972

[In thousands of short tons (cargo). Excludes Great Lakes. In addition to commerce shown here, many ports have (a) commerce with ports on internal rivers and canals; (b) purely local port traffic]

PORT	Im- ports	Ex- ports	COASTWISE		PORT	Im- ports	Ex- ports	COASTWISE	
			Re- ceipts	Ship- ments				Re- ceipts	Ship- ments
Total ¹	372,418	197,430	242,586	242,649	Port Everglades Harbor, Fla.	3,505	227	6,533	829
ATLANTIC COAST PORTS					Miami Harbor, Fla.	1,466	392	339	199
Portland Harbor, Maine	25,726	24	3,909	685	San Juan Harbor, P.R.	4,008	241	3,824	981
Portsmouth Harbor, N.H.	1,178	-	977	33	GULF COAST PORTS				
Salem Harbor, Mass.	1,108	-	452	2	Charlotte Harbor, Fla.	914	504	28	315
Boston, Port of, Mass.	7,873	758	14,591	1,776	Tampa Harbor, Fla.	5,462	13,034	14,368	8,997
Fall River Harbor, Mass.	2,272	(z)	1,719	86	Mobile Harbor, Ala.	6,674	3,054	171	3,026
Providence River and Harbor, R.I.	1,909	262	6,008	448	Pascagoula Harbor, Miss.	80	1,925	534	2,624
New London Harbor, Conn.	312	-	2,599	1,654	New Orleans, La.	8,149	28,886	2,345	18,056
New Haven Harbor, Conn.	4,035	253	6,883	1,817	Baton Rouge, La.	8,314	7,710	893	8,455
Bridgeport Harbor, Conn.	1,750	5	1,447	127	Lake Charles, La.	582	1,356	71	3,115
Port of New York, N.Y., and N.J.	56,170	5,609	36,921	20,849	Galveston, Tex.	564	2,802	224	708
Hempstead Harbor, N.Y.	-	-	2,207	1,918	Texas City, Tex.	655	684	380	6,096
Port Jefferson Harbor, N.Y.	1,382	(z)	3,746	360	Houston, Tex.	5,611	13,758	2,947	20,471
Port of Albany, N.Y.	2,138	703	2,371	32	Corpus Christi Bay, Tex.	4,973	3,152	108	10,554
Delaware River and tributaries	59,800	4,210	24,659	9,469	Freeport Harbor, Tex.	266	1,466	179	1,290
Baltimore Harbor and channels, Md.	18,443	8,177	6,064	1,614	Brazos Island Harbor, Tex.	1,039	316	(z)	960
Norfolk Harbor, Va.	8,206	29,007	2,457	168	Beaumont, Tex.	1,373	3,814	1,304	14,227
Port of Newport News, Va.	537	6,640	24	1	Port Arthur, Tex.	789	1,620	2,566	11,281
Port of Wilmington, N.C.	3,541	176	2,440	108	PACIFIC COAST PORTS				
Charleston Harbor, S.C.	3,348	767	2,840	245	San Diego, Calif.	237	253	985	-
Savannah Harbor, Ga.	3,650	1,377	2,059	174	Long Beach Harbor, Calif.	7,649	4,781	6,001	1,790
Jacksonville Harbor, Fla.	6,443	1,735	3,610	771	Los Angeles Harbor, Calif.	7,974	3,032	5,454	6,112
					San Francisco Bay Area, Calif.	1,484	650	16	53
					Coos Bay, Oreg.	(z)	3,881	428	464
					Portland, Oreg.	1,410	4,007	4,794	264
					Longview, Wash.	464	3,157	381	44
					Tacoma Harbor, Wash.	2,040	3,362	344	128
					Seattle Harbor, Wash.	3,387	1,076	1,722	1,389
					Honolulu Harbor, Ha-waii.	1,352	116	4,094	2,397
					Anchorage, Alaska.	513	-	1,402	141

- Represents zero. Z Less than 500 tons. ¹ Includes data for ports not shown separately.

Source: U.S. Corps of Engineers, *Waterborne Commerce of the United States*, annual.

No. 990. COMMERCE OF SELECTED GREAT LAKES PORTS: 1960 TO 1972

[In thousands of short tons (cargo). Comprises foreign, lakewise, and coastwise shipping]

PORT	RECEIPTS				SHIPMENTS			
	1960	1965	1970	1972	1960	1965	1970	1972
Total	168,043	183,723	183,561	170,235	178,287	190,506	193,077	180,009
Ashtabula Harbor, Ohio	7,773	6,854	6,303	5,650	2,450	4,246	5,598	6,399
Buffalo, N.Y., Port of	15,595	16,342	14,301	8,320	1,226	1,012	716	598
Chicago, Ill., Port of	12,303	16,411	15,588	15,124	8,411	11,927	11,302	9,377
Cleveland Harbor, Ohio	17,113	20,981	21,772	22,835	511	832	965	998
Conneaut Harbor, Ohio	6,570	5,321	7,966	7,609	588	3,486	7,569	7,014
Detroit, Mich., Port of	25,334	30,980	29,183	28,162	1,892	1,020	1,753	1,140
Duluth-Superior, Minn. and Wis.	5,155	5,093	3,683	2,530	37,512	41,083	39,075	35,365
Indiana Harbor, Ind.	12,116	13,092	12,148	11,404	7,059	4,372	5,222	4,821
Lorain Harbor, Ohio	5,036	4,331	4,990	5,851	1,659	1,860	3,183	3,990
Milwaukee Harbor, Wis.	6,861	4,354	5,066	4,191	1,647	2,032	1,905	1,178
Sandusky Harbor, Ohio	38	44	47	101	5,616	2,056	4,986	5,481
Toledo Harbor, Ohio	5,870	7,395	7,128	6,503	27,815	37,279	24,412	18,435
All other	48,279	52,525	55,388	51,895	81,901	79,301	80,301	85,213

Source: U.S. Corps of Engineers, *Waterborne Commerce of the United States*, annual.

No. 991. FEDERAL EXPENDITURES FOR CIVIL FUNCTIONS OF THE CORPS OF ENGINEERS, UNITED STATES ARMY: 1940 TO 1973

In millions of dollars. For years ending June 30. Includes Puerto Rico and outlying areas. Represents funds actually expended under the direction of the Chief of Engineers for maintenance and improvement of rivers and harbors, flood control, and other miscellaneous works]

YEAR	Amount	YEAR	Amount	YEAR	Amount	YEAR	Amount
1940	214	1961	938	1965	1,211	1970	1,186
1945	134	1962	965	1966	1,291	1971	1,474
1950	635			1967	1,266		
1955	512	1963	1,093	1968	1,275	1972	1,535
1960	869	1964	1,097	1969	1,104	1973	1,737

Source: U.S. Corps of Engineers, *Statement of Costs*, annual.

No. 992. VESSELS ENTERED AND CLEARED IN FOREIGN TRADE—NET REGISTERED TONNAGE, BY FLAG OF CARRIER VESSEL: 1951 TO 1972

[In millions of net tons, except as indicated. Includes Puerto Rico and Virgin Islands. Excludes domestic trade. See also *Historical Statistics, Colonial Times to 1957*, series Q 192-203]

YEARLY AVERAGE OR YEAR	ALL PORTS					SEAPORTS ¹					
	Number of vessels	All vessels			Total tonnage	All vessels			Total tonnage	With cargo	
		Total tonnage	U.S.	Percent U.S.		U.S.	Foreign	U.S.		U.S.	Foreign
ENTERED											
1951-1955	48,082	115	39	34.3	76	101	35	65	78	27	52
1956-1960	51,874	155	31	20.0	124	139	27	112	110	22	88
1961-1965	49,870	188	33	17.9	155	166	30	136	128	19	109
1966-1970	53,469	232	29	12.5	203	206	27	180	157	18	139
1955	48,415	128	34	26.7	94	114	30	83	90	25	64
1960	51,375	163	30	18.5	133	146	27	119	119	20	99
1965	51,357	209	34	16.3	175	184	31	153	139	18	121
1970	53,293	254	26	10.3	228	227	24	202	171	19	152
1971	51,443	266	24	9.2	232	229	22	207	176	18	159
1972	54,147	295	25	8.4	271	267	23	244	203	19	184
CLEARED											
1951-1955	45,324	115	40	34.2	76	101	36	66	68	25	43
1956-1960	40,079	156	31	19.9	125	140	27	113	85	20	66
1961-1965	48,098	189	34	17.9	155	168	30	137	96	20	76
1966-1970	52,415	232	30	12.8	202	206	27	179	122	23	99
1955	46,642	129	34	26.6	95	115	31	84	74	21	53
1960	49,809	167	31	18.8	135	150	28	122	84	19	66
1965	49,779	209	34	16.3	175	184	31	152	103	21	82
1970	52,195	253	27	10.6	226	226	25	201	132	20	112
1971	50,400	258	24	9.4	234	231	23	208	118	18	100
1972	53,615	300	27	9.0	273	271	25	246	142	20	122

¹ Comprises all ports except Great Lakes ports.

Source: U.S. Bureau of the Census, *Foreign Commerce and Navigation of the United States*; and *Vessel Entrances and Clearances*, FT 975, annual.

No. 993. VESSELS ENTERED AND CLEARED IN FOREIGN TRADE—NET REGISTERED TONNAGE, BY CUSTOMS DISTRICTS: 1960 TO 1972

[In millions of net tons. Excludes domestic trade. Beginning 1970, Puerto Rico included in South Atlantic Coast, Hawaii in South Pacific Coast, and Alaska in North Pacific Coast]

CUSTOMS DISTRICT	VESSELS ENTERED					VESSELS CLEARED				
	1960	1965	1970	1971	1972	1960	1965	1970	1971	1972
North Atlantic Coast	75.8	88.6	102.1	97.1	110.6	80.8	89.7	99.9	97.6	110.3
With cargo	66.6	76.5	85.4	83.3	94.0	35.5	37.8	43.7	35.5	42.7
South Atlantic Coast	8.8	10.9	27.3	29.9	37.1	8.6	11.2	25.5	28.2	36.1
With cargo	7.8	8.7	21.2	22.5	28.1	5.1	5.3	11.4	11.0	14.1
Gulf Coast	27.0	37.6	36.1	39.5	45.3	25.2	36.3	42.8	46.2	53.9
With cargo	15.6	18.5	23.0	26.1	27.9	18.8	29.0	36.8	37.1	43.5
South Pacific Coast	17.1	21.5	27.5	28.7	33.2	18.0	21.8	27.7	27.6	32.7
With cargo	15.0	17.7	21.8	24.0	28.5	14.6	16.1	20.9	17.2	19.5
North Pacific Coast	10.1	13.0	24.9	22.6	27.0	9.4	12.8	24.3	23.4	28.2
With cargo	7.6	7.9	13.6	12.6	14.9	6.9	9.8	19.0	16.1	21.4
Great Lakes	16.9	25.3	27.5	26.8	28.2	16.9	25.2	27.2	26.9	28.5
With cargo	7.8	14.5	15.2	15.3	15.7	13.1	18.6	20.2	19.0	20.5
Alaska, Hawaii, P.R. and V.I.	6.9	12.2	8.8	11.2	13.1	7.7	11.7	5.8	8.2	10.0
With cargo	6.0	9.7	5.9	7.9	8.7	3.5	5.6	.5	.9	1.3

Source: U.S. Bureau of the Census, *Foreign Commerce and Navigation of the United States*; and *Vessel Entrances and Clearances*, FT 975, annual.

Transportation—Air and Water

No. 994. TRAFFIC THROUGH THE PANAMA CANAL: 1950 TO 1973

[For years ending June 30. See also *Historical Statistics, Colonial Times to 1957*, series Q 235-237]

YEAR	ALL TRAFFIC		COMMERCIAL OCEAN TRAFFIC ¹							
	Trans-	Cargo (1,000 long tons)	Trans-	Net tons ² (1,000)	Tolls (\$1,000)	Cargo (1,000 long tons)	1973			
							Nationality of vessel	Trans-	Net tons ² (1,000)	Tolls (\$1,000)
1950	5,891	30,302	5,448	28,013	24,430	28,872	Germany ³	789	6,929	6,092
1955	8,293	41,485	7,907	38,588	33,849	40,646	Great Britain	1,378	14,442	12,704
1960	12,147	60,402	10,795	58,302	50,939	50,258	Greece	1,071	9,332	8,197
1965	12,918	78,923	11,834	74,735	65,443	76,373	Japan	1,331	14,468	12,855
1967	14,070	92,998	12,412	88,266	76,679	86,193	Liberia	1,685	19,680	17,192
1968	15,511	105,538	13,199	96,488	83,907	96,550	Netherlands	449	3,211	2,781
1969	15,327	108,793	13,146	100,558	87,423	101,373	Norway	1,190	14,574	12,868
1970	15,523	118,900	13,658	108,142	94,654	114,257	Panama	959	5,856	5,004
1971	15,348	121,011	14,020	111,006	97,380	118,027	Sweden	419	4,622	4,073
1972	15,198	111,077	13,766	112,971	98,765	109,234	United States	1,276	11,104	9,796
1973	15,109	127,562	13,841	126,204	111,032	126,104	All others	3,294	21,986	19,470

¹ Comprises oceangoing tolls-paying vessels and foreign naval vessels of 300 net tons and over (Panama Canal measurement) for vessels rated on net tonnage, or 500 tons displacement and over for vessels rated on displacement tonnage.

² Panama Canal net.³ Federal Republic only.Source: Panama Canal Company, Balboa Heights, Canal Zone, *Annual Report*.

No. 995. EMPLOYEES IN GOVERNMENT AND PRIVATE SHIPYARDS: 1950 TO 1973

[In thousands. Prior to 1960, excludes Alaska and Hawaii. Annual average employment in establishments primarily engaged in building and repairing all types of ships, barges, canal boats, and lighters of 5 gross tons and over, whether propelled by sail or motor power or towed by other craft]

YEAR	Total	Private	Navy	yards ¹	yards	YEAR	Total	Private	Navy
		yards ¹							
1950	146	72	2	74	1967		235	140	95
1955	208	101	2	107	1968		236	141	95
1960	208	112		96	1969		233	142	91
1963	209	116		94	1970		216	133	83
1964	204	117		87	1971		205	130	75
1965	213	129		84	1972		205	135	70
1966	229	144		85	1973		203	138	65

¹ Includes all full- and part-time employees who worked during or received pay for any part of the pay period which includes the 12th of the month. Data have been adjusted to March 1971 benchmark levels indicated by data from Government social insurance programs.

² Includes Curtis Bay Coast Guard yard (M.D.).Source: U.S. Bureau of Labor Statistics. Current data for private yards published monthly in *Employment and Earnings*.

No. 996. EMPLOYMENT ON U.S. FLAG MERCHANT VESSELS, 1950 TO 1973, AND BASIC WAGE SCALE FOR ABLE-BODIED SEAMEN, 1956 TO 1974

[Employment in thousands; wage rates in dollars. Employment data as of June 30]

YEAR	Employ- ment ¹	YEAR	Employ- ment ¹	EAST COAST ³ YEAR AND MONTH	Monthly wage rate ⁴	WEST COAST ³ YEAR AND MONTH	Monthly wage rate ⁴
1950	56.6	1968	54.2	1956-June	333	1956-October	453
1955	57.5	1969	47.5	1962-June	393	1961-October	522
1960	49.2	1970	37.6	1968-June	444	1966-June	558
1965	239.1	1971	30.4	1972-January	470	1971-January	704
1966	51.9	1972	27.7	1973-January	528	1972-January	756
1967	54.6	1973	25.2	1974-January	555	1973-January	806

¹ Estimates of personnel employed on U.S. merchant ships, 1,000 gross tons and over. Excludes vessels on inland waterways, Great Lakes, and those owned by, or operated for, the U.S. Army and Navy, and special types such as cable ships, tugs, etc.

² Decrease due to seafaring strike.³ Seamen on both coasts receive extra pay for Saturdays and Sundays at sea. Beginning November 1955, West Coast incorporated this extra pay into base wages but East Coast did not.
⁴ Represents basic wage, over and above subsistence (board and room), paid to seamen having qualifying experience and employed on U.S. flag merchant vessels. Excludes overtime and fringe pay benefits.Source: U.S. Maritime Administration, *Seafaring Wage Rates*, and unpublished data. Beginning 1960, monthly employment data in *Maritime Manpower Report*.

Merchant Vessels

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No. 997. UNITED STATES FLAG MERCHANT VESSELS, STEAM AND MOTOR: 1950 TO 1973

[Dead-weight tonnage in thousands. As of June 30. Covers ocean-going vessels of 1,000 gross tons and over engaged in foreign and domestic trade, and inactive vessels. Excludes special types and vessels employed on Great Lakes]

YEAR AND TYPE OF VESSEL	ALL VESSELS		ACTIVE VESSELS		Domestic trade		Special Service		INACTIVE VESSELS		Temporarily inactive Number	Tons	Reserve fleet Number	Tons				
	Number	Tons	Total		Foreign trade		Coastwise Number	Tons	Noncontiguous Number	Tons								
			Number	Tons	Total	Tons	Number	Tons	Number	Tons								
1950-Combination-----	3,408	36,526	1,145	13,828	711	8,353	434	5,474	279	3,716	87	1,131	68	626				
Cargo-----	833	5,639	51	4,171	45	2,389	6	2,28	-	-	-	-	-	4	28			
Cargo-----	2,846	28,927	682	7,075	505	5,307	177	1,708	55	649	6	500	53	283	2,195			
Tanker-----	479	6,959	412	6,345	161	2,697	251	3,737	213	3,157	29	482	9	98	42	383	2,122	
1960-Combination-----	2,934	32,601	951	12,922	558	6,511	372	5,326	237	4,294	50	717	85	925	21	455	1,864	
Cargo-----	305	2,038	36	320	34	2,015	2	1,14	-	-	2	14	-	4	31	1,400	18,279	
Tanker-----	2,204	22,813	633	6,907	479	5,265	35	3,75	39	442	74	773	6	53	35	376	1,530	
1965-Combination-----	2,425	28,755	750	5,695	45	2,923	222	4,323	202	3,910	11	275	9	188	16	402	60	993
Cargo-----	236	1,558	19	1,561	18	1,153	512	6,877	217	3,953	118	667	27	72	89	50	993	200
Tanker-----	1,840	7,636	199	9,985	54	1,475	124	2,882	105	5,225	5	122	22	291	57	623	29	375
1970-Combination-----	1,790	23,280	819	14,073	386	5,775	245	5,388	142	3,859	25	417	78	1,352	188	2,920	63	1,163
Cargo-----	117	1,147	13	1,117	94	2	13	-	-	-	2	116	17	116	1	110	8	898
Tanker-----	1,302	14,298	557	7,173	344	4,605	68	837	10	116	17	252	41	469	145	1,731	73	988
1972-Combination-----	1,233	18,412	632	12,813	262	4,683	201	4,881	112	3,184	21	389	68	1,299	169	2,189	42	1,189
Cargo-----	168	9,959	7	61	5	46	1	46	-	-	1	1	6	1	1	1	9	916
Tanker-----	792	9,895	393	5,631	232	3,452	57	751	6	87	14	203	37	486	112	1,428	90	141
1973-Combination-----	1,051	17,297	595	12,847	312	6,618	196	4,725	113	3,026	17	281	66	1,418	87	1,504	11	916
Cargo-----	120	757	6	50	4	37	2	13	-	-	2	113	13	190	1	49	4	407
Tanker-----	688	8,320	357	5,335	237	3,749	59	796	8	113	13	388	1	408	61	790	39	110
-----	273	8,220	232	7,482	135	3,916	71	2,882	105	3,913	4	91	26	912	26	468	13	409

- Represents zero.

Source: U.S. Maritime Administration, *Employment Report of the United States Flag Merchant Fleet Ocean-going Vessels 1,000 Gross Tons and Over*, annual.

No. 998. U.S. MERCHANT MARINE VESSELS: 1950 TO 1973

[As of January 1. Includes Puerto Rico, Guam, and Virgin Islands. Covers documented vessels of 5 net tons or more. See also *Historical Statistics, Colonial Times to 1957*, series Q153-154]

YEAR	Number	Gross tonnage (1,000)	YEAR	Number	Gross tonnage (1,000)	YEAR	Number	Gross tonnage (1,000)
1950	36,083	31,215	1966	47,223	26,522	1970	49,993	28,613
1955	39,242	29,958	1967	48,700	27,251	1971	50,750	27,400
1960	43,088	28,581	1968	49,545	27,342	1972	52,855	27,057
1965	45,579	26,516	1969	49,991	28,591	1973	54,436	27,406

Source: U.S. Bureau of Customs and U.S. Coast Guard, unpublished data.

No. 999. MERCHANT VESSELS COMPLETED BY U.S. SHIPYARDS: 1950 TO 1973

[Tons in thousands. 1950-1960, represents self-propelled steel vessels of 2,000 gross tons and over for domestic use; beginning 1965, data based on ships of 1,000 gross tons and over. Excludes Alaska and Hawaii]

ITEM	1950	1955	1960	1965	1970	1971	1972	1973
Merchant vessels, number	26	9	26	13	13	14	13	24
Gross tons	405	119	410	173	342	394	387	734
Cargo, number	3	7	15	11	6	6	7	18
Gross tons	27	84	134	121	120	151	151	419
Deadweight tons	44	95	163	154	134	170	187	450
Tanker, number	23	2	11	2	7	8	6	6
Gross tons	378	35	276	52	222	243	206	315
Deadweight tons	609	55	456	92	427	473	415	663

Source: Through 1960, American Bureau of Shipping, New York, N.Y., annually in *The Bulletin*; thereafter, U.S. Maritime Administration, *New Ship Construction*, annual.

No. 1000. SHIPBUILDING IN PRIVATE SHIPYARDS—SUMMARY: 1960 TO 1973

[Tons in thousands: Gross tons for commercial vessels, light displacement tons for naval vessels. Covers steel self-propelled vessels of 1,000 tons or over]

ITEM	1960		1965		1970		1972		1973	
	Number	Tons	Number	Tons	Number	Tons	Number	Tons	Number	Tons
COMMERCIAL VESSELS										
Under construction, Jan. 1	60	979	47	550	49	1,288	59	11,810	88	2,893
Contracted for	23	270	16	166	13	580	48	1,565	41	1,907
Launched	31	471	17	221	11	322	23	634	24	579
Delivered	25	404	18	203	13	370	19	491	34	887
Under construction, Dec. 31	58	844	45	513	49	1,609	88	2,893	95	3,013
NAVAL VESSELS										
Under construction, Jan. 1	52	334	101	537	108	621	64	529	57	520
Contracted for	19	115	23	158	6	132	14	86	7	39
Launched	16	170	15	102	23	117	13	132	7	23
Delivered	12	39	18	122	32	166	21	95	8	33
Under construction, Dec. 31	59	410	106	573	82	588	57	520	56	626

¹ Adjusted to account for major changes made during construction.

Source: Shipbuilders Council of America, Washington, D.C., *Annual Report*, and unpublished data.

No. 1001. VESSELS REPAIRED OR CONVERTED IN PRIVATE SHIPBUILDING AND SHIP REPAIR YARDS: 1950 TO 1973

ITEM	1950	1955	1960	1965	1970	1971	1972	1973 (prel.)
All vessels:								
Yards reporting ¹	118	144	159	136	122	125	125	124
Vessels	33,287	35,413	37,774	35,600	30,200	36,300	36,000	34,800
Vessels under 1,000 gross tons:								
Yards reporting	111	130	132	117	110	108	115	112
Vessels	17,993	21,122	24,991	22,900	26,800	25,800	27,600	26,700
Vessels over 1,000 gross tons:								
Yards reporting	80	89	93	93	75	71	68	62
Vessels	15,294	14,291	12,783	12,700	12,400	10,500	8,400	8,100

¹ Not additive.

Source: Shipbuilders Council of America, Washington, D.C., *Annual Report*, and unpublished data.

Merchant Vessels

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No. 1002. MERCHANT VESSELS LAUNCHED AND OWNED—WORLD AND UNITED STATES: 1950 TO 1973

[Vessels of 100 gross tons and over. Excludes sailing ships, nonpropelled craft, and all ships built of wood]

YEAR	WORLD				UNITED STATES			
	Launched		Owned		Launched		Owned	
	Number	Gross tons (1,000)	Number	Gross tons (1,000)	Number	Gross tons (1,000)	Number	Gross tons (1,000)
1950	990	3,489	27,922	83,996	51	437	4,531	27,404
1955	1,437	5,315	20,067	100,069	26	73	4,225	26,343
1960	2,020	8,356	34,056	129,339	60	485	3,845	24,781
1965	2,280	12,216	39,628	159,979	130	270	3,224	21,478
1970	2,700	21,690	50,472	227,138	150	338	2,822	18,423
1972	2,561	26,714	55,251	287,965	251	611	3,305	14,951
1973	2,884	31,520	57,347	289,532	280	890	3,539	14,818

Source: Lloyd's Register of Shipping, London, England, *Statistical Tables*, annual; and *Annual Summary of Merchant Ships Launched in the World*.

No. 1003. MERCHANT FLEETS OF THE WORLD, BY TYPE OF VESSEL, 1970 AND 1972, AND COUNTRY OF REGISTRATION, 1972

[Vessels of 1,000 gross tons and over. As of December 31. Specified countries have 100 or more ships]

COUNTRY OF REGISTRY	TOTAL		COMBINATION PASSENGER AND CARGO		FREIGHTERS		BULK CARRIERS ¹		TANKERS	
	Number	Average age (years)	Number	Average age (years)	Number	Average age (years)	Number	Average age (years)	Number	Average age (years)
1970, world total	19,980	13	895	21	11,899	13	2,954	8	4,232	11
United States	1,579	22	171	25	1,076	23	38	25	294	19
Foreign	18,401	12	724	20	10,823	13	2,916	8	3,938	10
1972, world total	21,009	12	860	21	12,029	13	3,539	8	4,581	11
United States	1,150	22	153	27	685	22	32	27	280	20
Privately-owned	651	18	12	17	361	17	32	27	246	18
Government-owned	499	28	141	28	324	28	-	27	34	29
Foreign	19,859	11	707	20	11,344	12	3,507	8	4,301	11
Argentina	155	21	12	21	74	21	12	14	57	22
Brazil	233	14	6	36	154	14	29	13	44	12
British Colonies ²	100	14	5	24	51	15	26	13	18	13
Bulgaria	110	13	4	13	82	14	27	10	17	14
China (mainland)	272	21	22	20	199	21	21	21	30	16
China (Taiwan)	162	12	6	16	116	12	25	9	15	14
Cyprus	401	18	8	31	326	18	38	17	29	17
Denmark	297	8	8	16	202	9	29	5	58	7
Finland	213	11	6	19	143	10	15	10	49	14
France	427	10	12	15	219	11	64	9	132	10
Germany (East)	140	11	5	20	111	10	15	12	9	13
Germany, Fed. Rep. of	797	6	6	13	643	6	78	6	70	6
Greece	1,549	15	60	25	940	17	293	7	256	14
India	253	12	12	16	184	12	44	8	13	10
Indonesia	139	17	29	19	87	17	7	6	16	16
Italy	625	16	58	20	223	19	136	11	208	15
Japan	2,210	6	32	11	1,217	7	525	5	436	6
Korea (South)	119	14	1	26	76	16	18	7	24	12
Liberia	2,139	11	28	19	549	13	753	8	809	12
Netherlands	436	11	11	19	316	10	27	9	82	12
Norway	1,188	8	31	12	419	11	362	6	376	8
Panama	887	18	32	25	546	19	111	16	198	16
Philippines	170	17	21	11	111	18	9	13	29	18
Poland	263	9	2	19	191	9	56	8	4	15
Portugal	114	15	19	19	67	15	6	9	22	12
Singapore	176	16	18	22	138	16	6	10	14	15
Somalia	148	18	2	23	122	18	13	14	11	17
Spain	423	14	38	25	230	16	46	6	109	10
Sweden	337	8	5	10	175	9	79	7	78	6
United Kingdom	1,627	10	45	17	819	10	326	8	437	9
U.S.S.R.	2,140	10	79	18	1,482	10	135	14	444	9
Yugoslavia	187	11	11	13	189	12	20	6	17	9
All others ²	1,432	14	78	22	1,013	13	156	11	190	13

¹ Represents zero.

¹ Includes ore carriers and ore/oil carriers.

² Comprises Bahama Islands, Bermuda, Cayman Island, Gibraltar, and Hong Kong.

³ Includes countries with less than 100 merchant type ships of 1,000 gross tons and over.

Source: U.S. Maritime Administration, *A Statistical Analysis of the World's Merchant Fleets*, biennial.